FIFTY CENTS

Cost Reduction
And Control

New Panels of Light

JULY 1961

Advance Report
NAFM Supply Fair

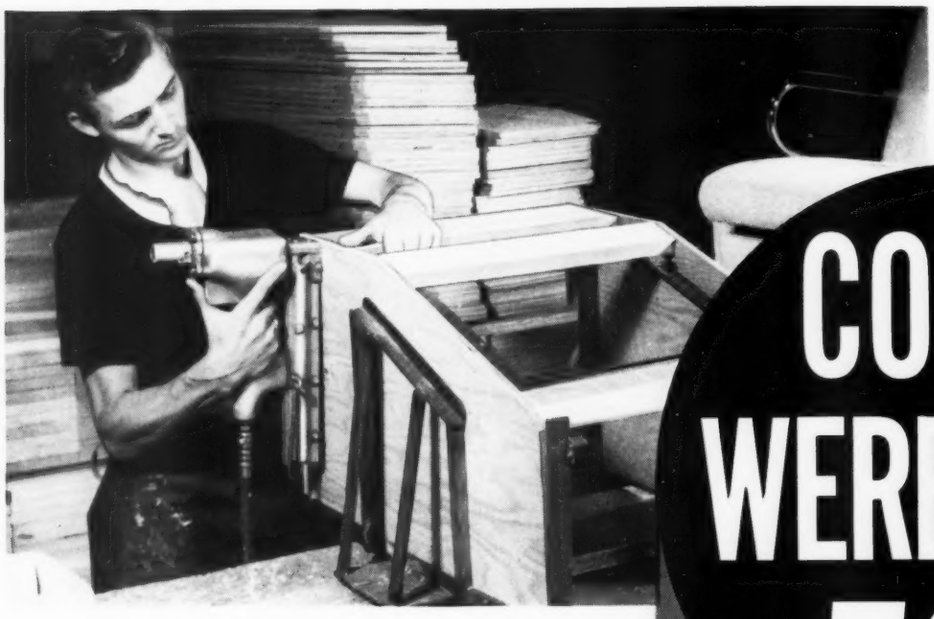
Simmons Story—Part 2

FDM

Furniture Design & Manufacturing

INTRODUCING A NEW EDITORIAL DEPARTMENT:

FABRICS IN FURNITURE DESIGN



FURNITURE FRAMES
Chair frame stock is put in a jig and 1½" DC Spotstaples are countersunk for a strong, smooth joint.

COSTS WERE CUT 50%

Rayette Co., St. Paul, Minnesota

A Leading Manufacturer of a Beauty Salon Line

"The Rayette Company improved production when we revamped our assembly line with new jigs and switched from hand nailing to automatic nailers," says William L. Ganschinietz, plant manager.

"All frame members are Douglas Fir plywood and hackberry. Hackberry is one of the hardest woods I've ever seen," says Earl Melsby, foreman of furniture assembly, "but the Spotnailer drives beautifully with a touch of the trigger. There is no problem with splitting, as with hand nailing, and no pre-drilling needed. When we were trying to hand nail hackberry with hammer and nails, all the crews complained and production was down."

"Rayette uses staples instead of nails because of the extra holding power," Ganschinietz said. "The heavy duty DC staples used penetrate easily using standard air pressure."

"Fortunately," Earl Melsby said, "I not only reduced assembly costs 50 per cent but I actually improved quality using these pneumatic staple guns. Since the tools are portable, we have no problem in adapting the guns when a chair model is changed. The way these sturdy guns stand up, we expect to get many years of service even though, like most of our new labor-savers, they paid for themselves the first month we used them."

This is a typical Spotnails saving story—write or phone today, find out how Spotnails, Inc. can save you time, make you money.

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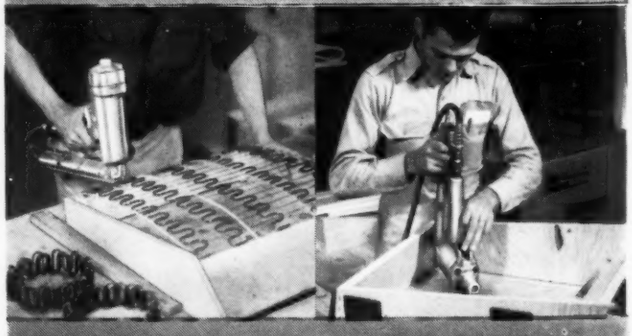
CHAIR ARMS
Are prefabricated in seconds with Spotstaplers.

SPRING CLIPS
Are automatically spaced as they are stapled to the frame using the metal jig shown. The Spotstapler used has a built-in magnet that holds spring clip in position.

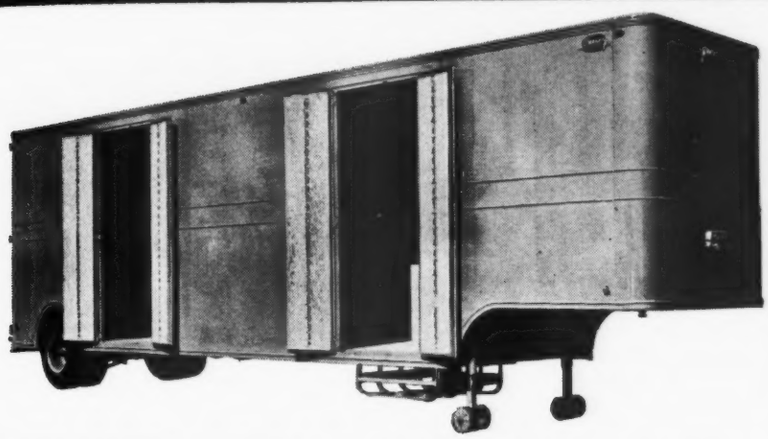


SPRING CLIPS
Are bent over the furniture spring and Spotstapled to lock the spring in place with a touch of the trigger.

CORNER BLOCKS
Are drawn up tight by DC Spotstaples or Spotnails for a perfect glue bond.

"It's a Dorsey" means the best in furniture van value !

DORSEY QUALITY. One Year Warranty MATERIALS AND WORKMANSHIP

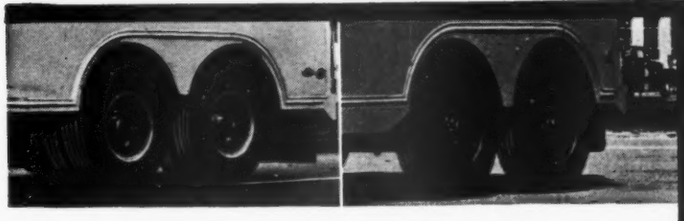


CARGO CONTROL VAN—Drivmatic-riveted for superior strength and appearance, Model FVP features exclusive Dorsey-designed posts for logistics tie-down system as well as regular recessed rope cleats. Standard specifications: Inside width 92 inches / Inside height 95-119 inches / Floor height 29 inches / Between wheel boxes 42 inches / Capacity: 2,696 cu. ft. in 38-ft. model.

If you're looking for furniture vans that haul more, look better and last longer, then "it's a Dorsey" for you! Long recognized as the most beautiful vans on the road, Dorseys also have maximum cubic capacity as well as strength: all models are ruggedly constructed with substantial rub rails. And every Dorsey carries a full year warranty. Choose today from the model that best suits your needs.

SUPER CUBE VAN—Utilizing specially-designed drop center axle, Model FCD offers the maximum in cubic capacity. Fully X-braced tubular steel side structure. Standard specifications: Inside width 91½ inches/Inside height 96½-125½ inches/Floor height 22½ inches/Between wheel boxes 42 inches/Capacity: 2,807 cu. ft. in 38-ft. model.

HI-CUBE VAN—Here's the van that set the pace for the industry. Fully X-braced tubular steel side structure makes Model FC as rugged as it is beautiful. Standard specifications: Inside width 91½ inches/Inside height 90-114 inches/Floor height 29 inches/Between wheel boxes 42 inches/Capacity: 2,558 cu. ft. in 38-ft. model.



Tailor your trailer to meet your requirements! Specify side door widths exactly as you want them (up to 120" wide!), overall heights up to 13'6", and choose from regular single axle, tandem or new four-tire tandem that carries extra payload with less jar and bounce than a single axle trailer. Air ride suspensions and 15" tire models without wheel boxes also available. One piece aluminum roof and aluminum side sheets (either smooth or corrugated) standard options.

DORSEY TRAILERS

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FDM

Furniture Design & Manufacturing

JULY 1961
VOLUME 33 NUMBER 7

The Management Publication Serving the Furniture Manufacturing, Upholstering and Bedding Industries

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Editorial Staff

EDITOR
R. A. Helmers

ASSOCIATE EDITOR
Alfred De Bat

ASSISTANT EDITOR
Carole Nadwidney

CONTRIBUTING EDITORS
R. D. Behm
Designing With Wood

Helen Little
Fabrics In Furniture Design

Spencer A. Tucker
Machine Hour Costing

Rudolph Willard
Cost Reduction & Control

CORRESPONDENTS
Carolyn Knuemann
Southeast

OUR COLOR COVER—

Fabrics made from 100 per cent Antron 24 nylon yarn, produced by Dupont, are featured on the Contemporama line from Flexsteel Industries. For other fabrics which are creating upholstery news see Fabrics in Furniture Design, a new section which begins with this issue on page 29.

Business Staff

PUBLISHERS
Louis I. Lewis
Myron F. Lewis

BUSINESS MANAGER
David Shulman

CIRCULATION MANAGER
D. Bolnick

Advertising Representatives

CHICAGO:
JOHN CASSEL
608 South Dearborn St.
Chicago 5, Ill.
WAbash 2-1272

NEW YORK:
S. L. BERLINER
50 E. 42nd Street
New York, New York
Murray Hill 2-6770

LOS ANGELES:
H. L. MITCHELL
1450 Lorain Road
San Marino, Calif.
CUmberland 3-4394

Editorial and Advertising Offices

608 South Dearborn St.
Chicago 5, Ill.
WAbash 2-1272

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EDITORIAL

A Report of Progress

Although the business press is frequently taken for granted by the industry it serves—readers and suppliers alike—we believe that each such publication has an obligation to fulfill. That obligation is total editorial service.

Of course, it is common knowledge that a good trade publication searches far and wide for news and ideas of value to its readers. It sifts the wheat from the chaff. It presents its findings in an easy-to-read form for busy people. It avoids like plague the commercial payola of puffery—the so-called free story with advertising tie-in—knowing full well its important readers can spot a phony. These are only basic fundamentals. We believe a trade publication should try to lead its industry, at least keep pace with it.

To help achieve our objective of total service we have added two new editorial features, beginning with this issue.

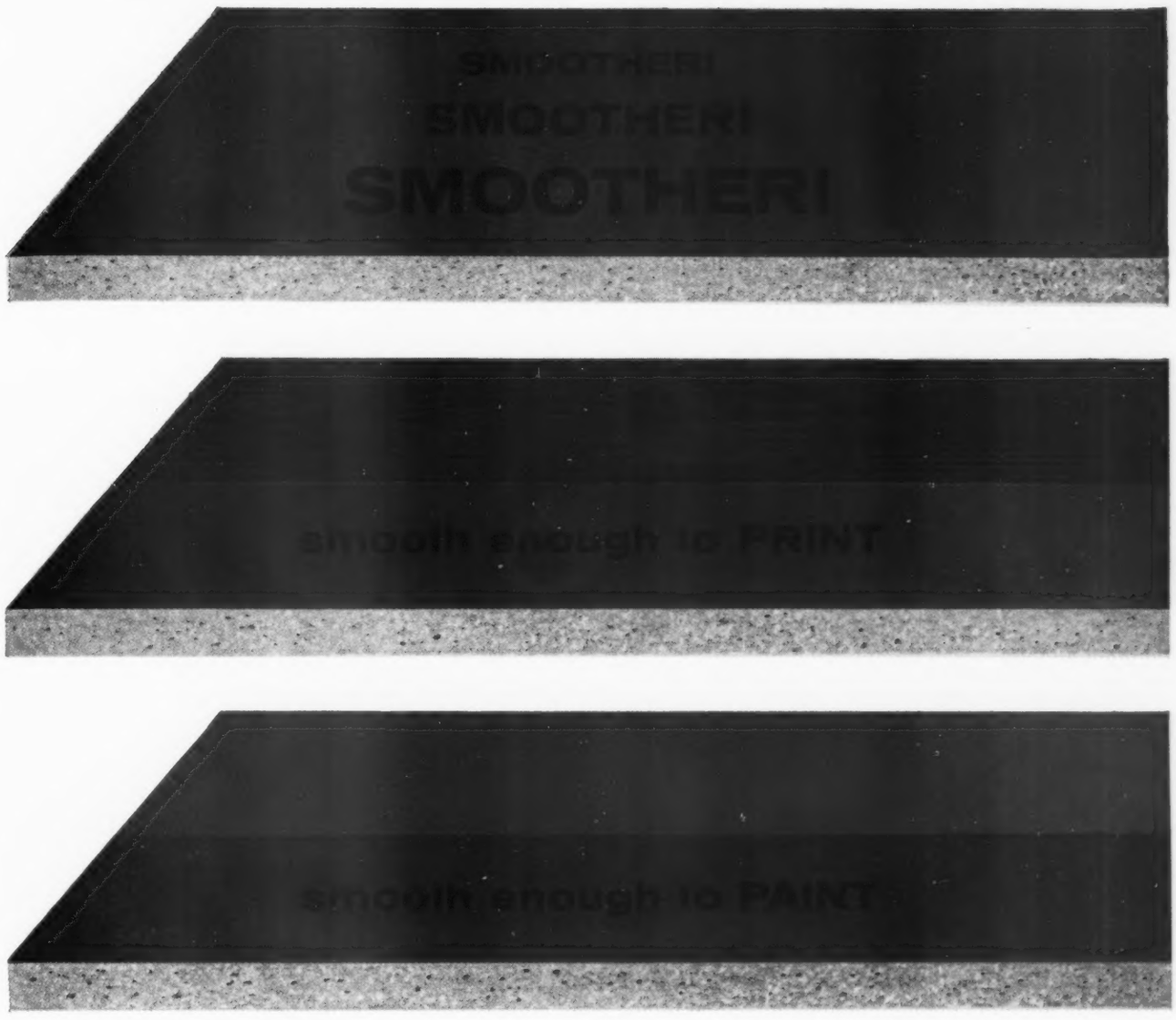
There is a new multi-page section entitled *Fabrics in Furniture Design*. This has been developed to stimulate ideas and help you make a better choice of covers for your furniture. Our fabrics editor, Helen Little, an authority in this field, will shop the fabrics market for you each month. We will attempt to present her selections in an inspiring manner.

Cost Reduction and Control is a new monthly column written by Professor Rudolph Willard, noted educator with extensive experience in woodworking and other facets of furniture manufacturing. This feature has been added to the *Furniture Engineering* section, another step toward total service to technical management.

As always, your comments and suggestions are welcome. You can be certain that these additions are not the last to be seen in FURNITURE DESIGN & MANUFACTURING. Plans are under way to further expand its usefulness to you.

We thought you would like to have this editor's report of progress on what we are doing to make this magazine essential reading to you . . . the men who mean business throughout the entire furniture manufacturing industry.

R. A. Helmers, Editor



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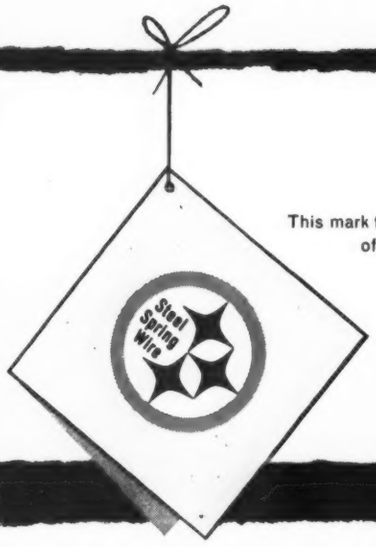

This mark tells you a product is made
of modern, dependable steel.

Innersprings give your

sales story DEEP-DOWN support

No matter how you style your furniture, or what materials you use, you can add a solid sales point just by adding innersprings. We know this from a nationwide market study just completed by Alfred Politz Research, Inc. Here's what people said about innerspring furniture:

firm . . . cool . . . durable . . . odorless . . . reasonably priced

Obviously, many people have firm convictions about innersprings. You can put this preference to work for you simply by adding the solid comfort of innersprings to your furniture—and telling people about it!

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FDM
FURNITURE DIGEST FOR MANAGEMENT

For more complete information on any of the Bulletins below, just circle the Bulletin Numbers on the READER SERVICE CARD which you will find elsewhere in this issue. A copy of the source material will be sent to you promptly.

Management Notes

PROFITABLE MANAGEMENT FOR MAIN STREET, a booklet dealing with a variety of business problems through the use of case histories, is available from *Dun and Bradstreet, Inc.* For a copy circle Bulletin J-178.

THE AMERICAN SOCIETY FOR TESTING MATERIALS is making available a 62-page booklet listing publications describing the Symposiums, Manuals, Special Publications, Indexes, Compiliation of Standards, Charts, Reference Photographs and Reports published by the Society through the years. The publications cover all phases of materials and their evaluations and are arranged conveniently by titles and subject. For a copy, circle Bulletin J-179.

SHORT COURSE IN PLANT LAYOUT, Material Handling, Warehousing and Shipping will be held Sept. 17-22 at Lake Arrowhead Conference Center in the San Bernardino, Calif. mountains. Presented by the departments of Engineering and Engineering Extension, *Universtiy of California,* the course provides a concentrated lecture, seminar and workshop program for management and supervisory personnel from all industries. Morning and afternoon hours will cover current thinking and solutions to problems typically encountered while evening workshops will deal with individual problems, with layout and instructional materials provided and emphasis placed on back-home applications. Fee for the course is $125, which includes board and room. For further information, circle Bulletin J-180.

FOURTH ANNUAL FURNITURE DESIGN AWARDS CONTEST was announced by the *National Cotton Batting Institute* and the *National Cotton Council.* Open to all professional and student designers, the contest emphasizes the versatility of cotton and spring construction in contemporary furniture. Four $1,000 prizes will be awarded at the American Furniture Mart's annual press luncheon preceding the Winter Furniture Market in Chicago. Deadline for this year's competition will be about December 1. For more information, circle Bulletin J-181.

THE STORY OF HARDBOARD, from forest to end uses in the home and industry is presented in a 16-page illustrated booklet published by the *American Hardboard Assn.* in cooperation with *American Forest Products Industries, Inc.* Included are basic definitions of hardboard, origin, and current step-by-step processes in its manufacture. For a copy, circle Bulletin J-182.

NATIONAL ASSN. OF FURNITURE MANUFACTURERS Board of Directors, at a meeting June 17, approved plans to sponsor a labor relations conference, to be held in the fall. *John M. Snow,* executive vice president, said location and date of the conference will be announced later.

B. F. GOODRICH CO. has established a Design Center in New York City for design, styling and packaging of its products. *James D. Floria,* director of design will manage the center located at 300 Park Ave.

THE NATIONAL PLASTIC PRODUCTS CO., Odenton, Md., has developed a postforming grade Nevamar high-pressure laminate, reported to offer fabricators greater economy in operation. Higher temperatures can be applied to the new product for faster press cycles.

THE DAYCO CORPORATION announced a complete line of urethane foams suitable for laminating with all types of fabrics through fusion, adhesive or quilting techniques. The firm reports the foam laminates will give furniture designers and interior decorators an endless combination of fabrics with built in cushioning, sound and thermal insulation properties in a single package material.

U. S. STEEL is launching a campaign in support of the *National Assn. of Bedding Manufacturers'* "Better Sleep Month" in September through national and local advertising, publicity campaigns and trade promotions. U. S. Steel's retailer's kit will contain a 32 in. by 70 in. banner proclaiming Better Sleep Month. Photo shows banner and bedding industry executives, left to right: *William H. Munter,* Furniture Manufacturers Assn. of California; *Sheldon Duncan,* Simmons Co.; *Max Miller,* Massachusetts Mattress Co.; *Abe Gennett,* Sleepmaster Products; *Marc Hoffman,* California Eclipse Sleep Products and president of the National Assn. of Bedding Manufacturers; *John G. Sevcik,* Burton-Dixie Corp.; *Duke Sloan,* Furniture and Bedding Spring Institute.

APPOINTMENTS

LEGGETT AND PLATT, INC., Carthage, Mo., manufacturer of spring constructions named *Don Frederick* sales manager of its Louisville, Ky. plant.

TIMESAVERS SANDERS INC., Minneapolis, Minn., appointed *E. V. Prentice Co., Inc.,* Portland, Ore. as distributor in northern California, Oregon, Washington, Montana and Idaho.

AMERICAN WALNUT MANUFACTURERS ASSN. named *Donald Gott,* former sales manager for the Marshfield mill of Weyerhaeuser Co.'s Roddis division, as secretary-manager.

TO PAGE 12

SELECTED ISSUE:

For Appreciation and Growth

. . . Adequate working capital for current needs and growth through accounts receivable financing.

. . . Enlightened credit checking for sales expansion with all risks eliminated through factoring.

. . . More time for planning and sales in the new hard-sell era — "Time Is Money"

Three favorable prospects that make your association with Iselin-Jefferson Factoring a selected investment for the future.

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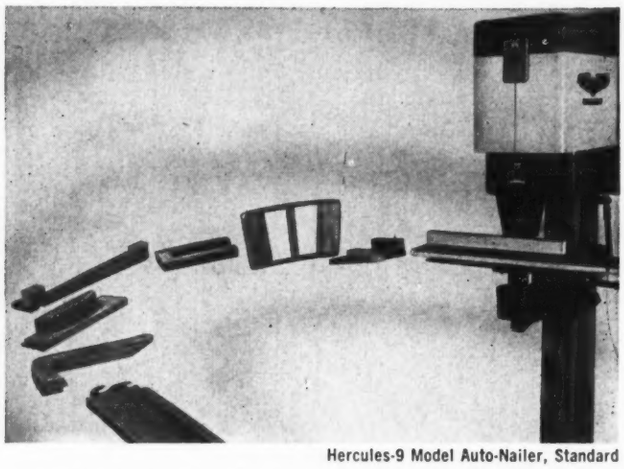

Hercules-9 Model Auto-Nailer, Standard

Here's the **Auto-Nailer®** which brings cost-cutting **automation** to your furniture subassembly. Makes its own nails from a coil of wire and drives up to 145 per minute with incredible precision. Nails are instantly adjustable up to 2¾" . . . equivalent to 9d length. Smooth operation . . . no misfires or jamming. Every nail becomes part of the product — none bent, dropped, rusted or carried away. As each nail is driven, material is clamped under pressure . . . assuring a tight joint. In glue-nailing, this pressure squeezes glue to a uniform coating. Nails sustain the pressure, acting as internal clamps while glue sets. The change from one job to another is rapid. Little or no set-up . . . simple or no jigs. Here is true **automation** economy for your furniture production. Quick, easy, accurate nailing solves production problems . . . relieves operator-tension . . . brings a new high to quality and a new low to costs.

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Furniture Skid, brad clinched. Auto-Nailer makes, drives, countersinks and clinches nails at the rate of 3 per second.

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Dinette Chair Back. Auto-Nailer provides close spacing and accurate edge nailing with no splitting of wood.

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FOR DATA CIRCLE FDM NO. 1921

CONTINUED FROM PAGE 10

DuCHAINE MORSE WALTON

CROSSETT LUMBER CO., Crossett, Ark., which begins operations of its new six million dollar flakeboard plant in early fall, made the following key appointments: *W. D. Morse, Jr.*, production manager; *T. H. Walton*, technical director; *R. J. DuChaine*, plant superintendent; *J. M. Armstrong*, mechanical supervisor; and *William S. Rule*, finishing and shipping supervisor.

GOLDING UPHOLSTERY FABRICS, Div. of *Golding Bros. Co., Inc.*, High Point, N.C., has appointed *H. William Githens* as director of styling. A leader and veteran in textile design, Mr. Githens will direct and coordinate a major extension of styling services to the furniture manufacturing and upholstering fields.

DAVIDSON RUBBER CO., Dover, N.H., manufacturer of molded urethane foam cushioning, elected *Coleman F. Hogan* president, succeeding *Virginia P. Dee* who resigned as President but will continue to serve as treasurer. The firm also named *Robert P. French* to head a newly created Midwest sales district, with headquarters in South Bend, Ind.; and appointed *Herbert H. Adkins* as southeastern district manager.

SHOEMAKER COTTON HOGAN

MASONITE CORPORATION, Chicago, promoted *William A. Cotton* and *Paul B. Shoemaker* from vice presidents to executive vice presidents, and named *Andrew J. Watt* and *Victor R. Marsh* as vice presidents.

Supplier Announcements

KELLER H. HUMPHREY LUMBER CO. is moving its main offices to Temple, Tex. and is completing a new, modern plant for manufacturing solid-semi-finished furniture dimension and special dimension stock. The firm will engage in manufacturing and wholesaling foreign and domestic hardwoods, custom kiln drying, surfacing and furnishing the

TO PAGE 14

what has LEBANITE *that other hardboards don't have?*

LEBANITE *combines the best features of many boards into one hardboard —and adds important unique features of its own.*

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Custom Manufacturing
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Precise electronic control of fiberizing, blending, and lay-up guarantees UNIFORMITY of Lebanite's light blond color, smooth texture, and attractive appearance. They remain identical from panel to panel.

Lebanite's SMOOTH surface is achieved through an exclusive patented machining process. 15% more fines are distributed in the panel surface. The result is a board ideal for *printing and graining*. Edges can be stained or waxed and buffed. The internal strength of the unique process makes Lebanite excellent for *bonding plastics or veneer*.

Lebanite saws, drills, punches, routs, and shapes cleanly for maximum WORKABILITY.

PANEL SIZES: 48 x 96. Other sizes quoted on request.
THICKNESSES: 1/10, 1/8, 3/16, 1/4, 5/16, 3/8.

LET US SHOW YOU how LEBANITE can help you manufacture a better product... more profitably.
WRITE, stating intended application.

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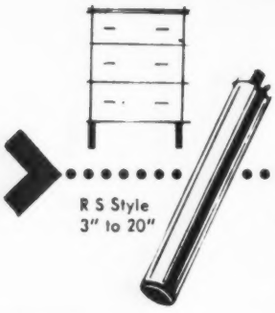
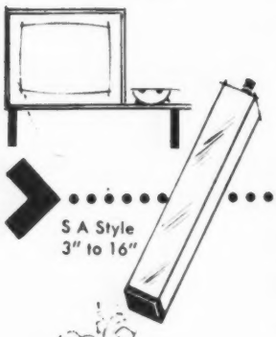
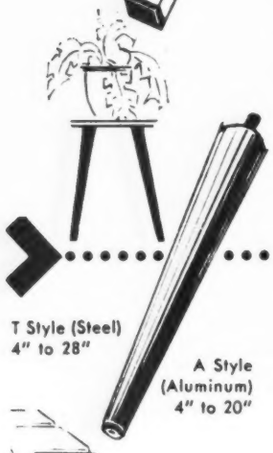


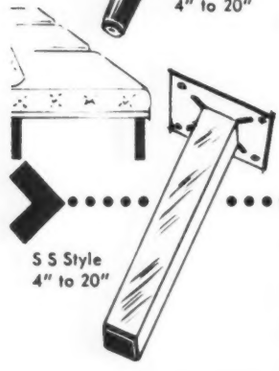
STRAIGHT ROUND Tubular Leg. 1⅛" diameter. Ideal for that clean modern look. In stock in Satin Brass finish, other finishes available.



ANODIZED SQUARE 1" Leg Tubular Aluminum. World's first practical "screw-in" type square K-D Leg. Available in Satin Brass or clear anodized aluminum finish.



POPULAR TAPERED shapes that are now so widely used. Available in both steel and anodized aluminum. Stocked in Satin Brass finish.



FLANGED SQUARE tubular leg. Heavy gauge mounting plate, welded to leg. Stocked in Satin Brass. Other finishes available.

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FOR DATA CIRCLE FDM NO. 1963

CONTINUED FROM PAGE 12

industrial trade with its dimension requirements. They have also opened sales offices in Dallas, Tex. and San Francisco, Calif. and their former quarters at Montgomery will serve as purchasing and production offices. Officers of the Temple division are: *Keller H. Humphrey,* president; *David S. McCrary, Jr.* and *A. P. Brashear, Jr.,* vice presidents, and *S. E. Carter,* secretary-treasurer.

LEEWOOD CORP., Lowell, Mass., has introduced a new bound, shredded polyurethane foam called Leefoam. The material is supplied in large buns, 36 to 60 in. wide, 70 to 90 in. long, and 14 in. high, as well as cut to size or in diecut shapes.

NOPCO CHEMICAL CO., producer of urethane plastic foam, has acquired six midwest foam companies from *D & W Clark Corp.,* Chicago, for 30,000 shares of Nopco common stock. The six firms are all engaged in the fabrication and distribution of urethane foam, foam rubber, upholstery fabrics and fiber products.

GENERAL TIRE & RUBBER CO., Toledo, O., is constructing a new two-story office building for its Textileather Division, expected to be completed in December.

Customer Expansions & Personnel Changes

DENNO FURNITURE opened its new store at 3131 S. Saginaw Rd., Midland, Mich. It serves as a branch of *Ittner Furnture,* Saginaw, Mich., both owned by *Lawrence Denno.*

BING FURNITURE CO., a Cleveland-based retail furniture firm with 11 outlets in northern Ohio, was purchased by a corporation headed by the Schottenstein brothers of Columbus, O., who operate ten retail stores in central and southern Ohio. The Bing stores will continue business under the same corporate name.

HILLCREST FURNITURE opened at 6145 Mayfield Rd. in the Hillcrest, Ohio area. *Joe and Harold Blane* and *Jack Zucker* are owners of the store which is third in chain. The store will handle Early American, Contemporary and Provincial furniture, accessories and appliances.

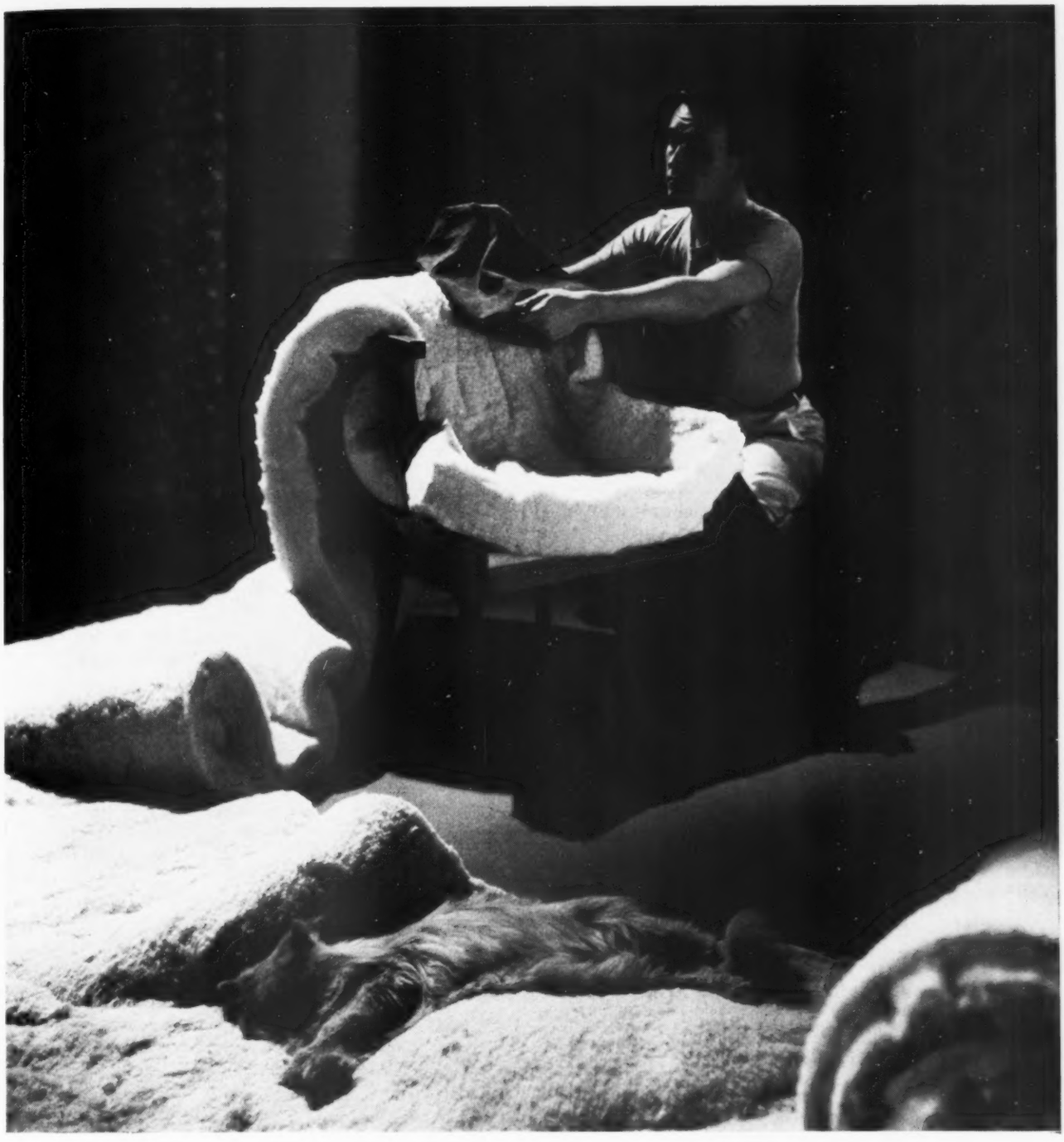
MILLER'S FURNITURE STORE opened on North Potomac St., Hagerstown, Md. *Jacob Miller* is president of the firm which operates a chain of stores.

WHITE FURNITURE opened a new store at 4702 N. High St., Columbus, O., devoted exclusively to Early American furniture and accessories. *William Coulter* is manager. The firm operates another store at 625 W. Broad St., Columbus.

ROCKFORD FURNITURE CO., Newark, N.J. opened its fifth branch store on Route 35 in Neptune, N.J.

Obituary

DAVID B. MORGAN, SR., Asheville, N.C., one of the founders of Dimension Manufacturing Co. and Morgan Manufacturing Co. passed away last month.



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for mattresses, furniture, automobile seats **COTTON CUSHIONING** is a **NATURAL**

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FOR DATA CIRCLE FDM NO. 1951

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FOR DATA CIRCLE FDM NO. 1934

RUDOLPH WILLARD

HELEN LITTLE

Two Furniture Authorities Become FDM Columnists

Another new columnist makes his debut in this issue. Rudolph Willard, a noted authority with a broad background in production engineering will present a regular monthly article on cost reduction and control.

Willard is visiting professor in the Department of Industrial Engineering, Furniture Manufacturing and Management, North Carolina State College, Raleigh, N. C. His experience in the furniture manufacturing industry dates back to the 1920's when he was employed by Tennessee Furniture Corp., Chattanooga, Tenn., as personnel manager, and later as plant methods and layout engineer and superintendent of one of its bedroom furniture manufacturing plants. In 1928-29 he was production manager of two plants and superintendent of one plant of the Empire Furniture Co., Huntington, W. Va.

He also was a field engineer for Management Service Co. of Chicago, management consultants specializing in methods, incentive rates and production engineering.

In the 1930's Willard was an industrial sales engineer for hardwood dimension parts and plywood.

From 1937 to 1951 he was a consulting engineer specializing in production woodworking including product design, product, methods and process engineering and plant layout.

In forthcoming issues Willard will cover such subjects as lumber seasoning, machining of materials, finishing equipment handling, manpower utilization and incentive systems. His knowledge and experience will bring practical and important facts to all concerned with production and engineering management. ■

With the expansion of *Furniture Design and Manufacturing* magazine into coverage in depth of the upholstery fabric scene, Helen Little, New York style authority and long time home furnishings writer and editor, will head a new FDM section called "Fabrics in Furniture Design."

Joining the staff as a contributing editor, Miss Little brings more than 20 years of fabric and fashion experience to FDM. Now a fabric and furnishing consultant, she started in the field as the first full-time representative for *Home Furnishing Daily* in Chicago. Working with this publication ten years, she rose to the position of fashion editor and moved to the daily's New York office. Miss Little left HFD to become an editor of *House Beautiful,* where she remained nine years and after which became a consultant.

While in Chicago she also wrote the "Martha Wood" column for the *Chicago American,* which was the Hearst newspaper's copyrighted name for home furnishing editor. Before joining Hearst and HFD in Chicago, she had written for the *Honolulu Star-Bulletin.*

A graduate of the University of Montana, the new FDM contributing editor received a master of arts degree from the University of Washington, where she did graduate work in decorating and art.

She is a charter member of the National Home Fashions League; member of the Fashion Group, and associate member of the American Institute of Decorators Away from the typewriter she is Mrs. Helen Little Yarling, and lives with her husband in Manhattan. ■

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- ✓ BURKART FOAM** WITH SISAL CENTER—For reversible cushions—a layer of sisal with Burkart Foam top and bottom.
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- ✓ BURKAIRE* WITH BURKART FOAM** CENTER—Superior quality cushions with a center layer of Burkart Foam with Burkaire top and bottom.
- ✓ BURKAIRE* PADS — With slots already cut and shaped to pattern for chair backs of any design.
- ✓ JUTE PADS—Finest quality Jute Pads made in any weight—plain or with latex on one side.
- ✓ SISAL AND COTTON COMBINATION WITH BURLAP—Combination pads of sisal and cotton—burlap covered or with burlap skirts on one or more sides.
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- ✓ TULA PADS—Curled hair and Tula Pads—latex impregnated pads cut to any size and thickness required.
- ✓ LATEXED SISAL PADS — The finest type of sisal heavily coated with latex on one side—permanently puncture proof.
- ✓ BURKAIRE* PADS—With channels already cut for immediate installation into tufted backs.
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*BURKAIRE—*a resin-impregnated cotton pad which holds its shape permanently.*

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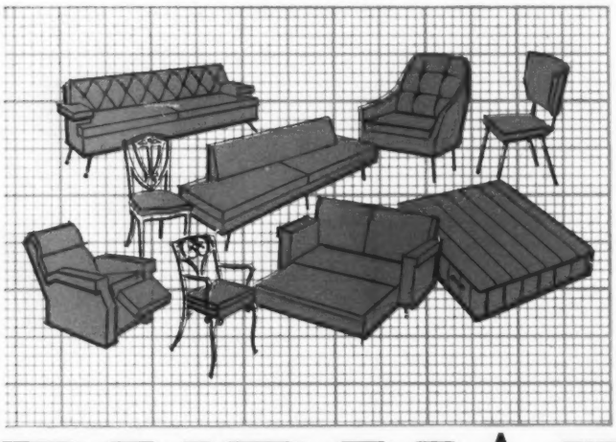
The greatest variety of cushioning ever offered the furniture industry!



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Note the check list above. There you will find Burkart cushioning material in every possible combination to save you time and money . . . and give you the best job every time.

All of your insulating and cushioning problems can be solved by Burkart's wide choice of pads. Add to this the economy of getting pads tailored exactly to your requirements, and you see why Burkart is the name to specify when you want the *best* for any job, at the *right* price, from *one* source. Write today for additional information, or a visit from one of our skilled specialists.

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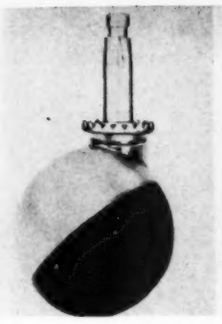

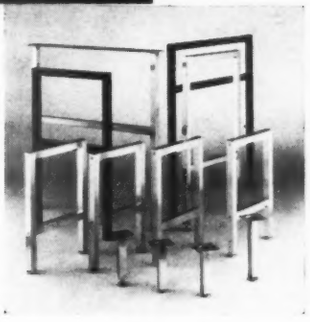

NAFM Supply Fair Features New Products & Production Methods

The combined 1961 National Assn. of Furniture Manufacturers annual convention and Supply, Equipment & Fabric Fair promises to be one of the largest ever held with nearly 100 supplier exhibitors thus far registered.

The most modern, efficient methods and equipment for the assembly of wood furniture and components will dominate the session of the cost and production program planned for the NAFM's 33rd convention to be held September 16-19, at the Conrad Hilton Hotel in Chicago.

The Seventh Annual Supply, Equipment & Fabric Fair is expected to attract exhibits by more than 120 foremost suppliers. As of July 1, 88 firms producing woodworking machinery, dimension parts, components, stapling and other fastening equipment such as glues; cushionings, fabrics, and services have registered for exhibition space, John M. Snow, NAFM executive vice president reported.

The association announced that convention program will feature a session on wood furniture assembly, specifically for plant production executives and will be conducted by Jerry Metz, president of J. L. Metz Furniture Co., assisted by A. L. Fader, of A. L. Fader Co., Chicago.

The complete cost and production program will include additional sessions on finishing of woods and furniture coverings. Emphasis will be on newer and better ways to produce furniture, Snow said. There will also be sessions for top executives, including a panel discussion on "How to Make Your Market Space Pay."

A wide range of furniture parts, new tools and equipment, is expected to be shown in addition to construction materials. New foam products are to be seen, including a foam combining two different compression factors, to obtain new softness in 100 per cent rubber latex foam and yet retain weight supporting factors. Several improvements in air gun tackers and faster nailing equipment are also among the new products.

The NAFM Fair is timed each year so as not to interfere with markets. More than 2,000 furniture executives, production men and designers are expected to attend.

FURNITURE DESIGN & MANUFACTURING will again publish its popular and helpful illustrated catalog of fair exhibits. This comprehensive section, to appear in the September, 1961 issue, includes pictures of the principal products to be shown by each exhibitor, a brief description of the display and/or demonstration, names of technical personnel and sales representatives in attendance, and location of the booth. FDM Reader Service will handle all reader requests for information regarding products exhibited at the Fair with its new, speedy IBM tabulating equipment. ■

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FOR DATA CIRCLE FDM NO. 1960

FDM

DESIGNING WITH WOOD

BY R. D. BEHM

To find out how the "ordinary housewife" feels about styles, watch her table shopping habits—this is a saying of some alert designers and manufacturers.

There is a lot of truth in it, as tables are often an impulse buying item having the same psychological lift in the home that buying a new hat has for a woman. Fortunately, this year, we have an analysis of the table groups shown at the market as a result of a new expanded study of the American Walnut Manufacturers Assn. The big swing to Early American is not yet apparent in table groups; however the flavor of traditional influences in the modern grouping is noticeable and pleasing.

This is the first tabulation and there are no comparisons with previous markets. We have instead taken the June 1961 survey on case goods by the same organization with totals of June 1960 for the comparison shown in the chart.

Since walnut is a favored wood in dining room, bedroom furniture and tables, it is proper we start our specific design in wood discussions with this popular American wood. Other woods will have equal time, of course, and we plan to take up all kinds of core constructions and wood fiber products.

House and Garden magazine recently wrote . . ."as the demand for each of the fine hardwoods soars and wanes, one which seems to have enduring popularity is walnut." And so it has been since the first walnut species was labeled *Juglans Regia,* meaning regal or queenlike. For the design history of walnut started with the Egyptian pharaohs, in whose tombs was found beautifully veneered furniture with artistic inlays. In the mid-American Indian mounds intricately carved walnut birds were discovered among the artifacts of this remote civilization.

But we started out with design as our theme and while the early American adaptations were decorative and with a noble sturdiness, the full beauty of walnut in its figure and character were emancipated with the perfection of the veneering and laminating processes. For it is in the matching and geometric pattern the lasting beauty and exciting character of walnut is achieved.

The wide variety of walnut veneers available to the designer is one of the basic reasons for its continued popularity. The transitional cycles or trends of use of specific walnut veneer types form an interesting pattern that bears a relationship to human desires and attitudes. Such information has been kept accurately by the Walnut Assn. and we only wish the 18th century masters and the colonial craftsman of the golden age of furniture had kept some similar record. As it is, we have many beautiful walnut furniture pieces and clocks which indicate the high regard Europeans had for *Juglans Regia*—French walnut, Persian walnut, English walnut and the many other regionally named walnut trees which are all of the same family. Here in America, the stronger, more stable *Juglans Nigre* or American walnut was used in much of the fine furniture including George Washington's baby crib, and famous desks which indicate this new found wood commanded a prestige position along with San Domingo mahogany with the master craftsmen of the golden age. The figure was strong and full of character, a trait again popular during the 20's at the beginning of the "Great Gadsby" era.

Old timers in the furniture and design field each seem to have a different impression of the important themes in furniture at a given time in history. Each in his way is right, as all style categories are represented even when one seems to dominate. To double check the mood and visible characteristics of case goods, we went back into the files of the American Walnut Manufacturers studies on the market presentations and the record

TO PAGE 24

SEAT CLIP

Attaches to wooden frame of seat... snaps over tubular metal frame member. Snap-in prongs ensure secure anchorage

GLIDE

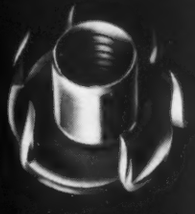
Rubber cushion insulates hard, smooth-sliding polyethylene base, damps out vibration, ensures silence. Swivel base lies flat, does not mar floor coverings.

CHAIR-BACK FASTENER

Attaches to wooden frame of chair back... and serves as both trim-piece and fastener. Teeth bite into tube for maximum strength and rigidity.

Carefully engineered IDEAS BY DOT help boost K-D furniture efficiency

6-PRONG TEENUTS*



Greatly increased push-out resistance due to curved prongs, which toe in for maximum holding power. Virtually eliminates the problem of lost fasteners.

PROPELLER-TYPE TEENUTS*

Provides up to 160 lbs. holding power in hard maple... greatly reduces risk of split legs. Easily installed in drilled hole with a hammer blow.

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Low-cost blind fastener withstands 1400 lbs. direct pull in face grain oak. Easily driven into 5/8" x 5/8" hole by hammer and simple driving tool.

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FOR DATA CIRCLE FDM NO. 1930

BONWITZ COLLECTION designed by Wallack, features bedroom group, extreme top of page, and modular cabinet and wall shelf arrangements, at right. Directly above, from the Basicanna collection, is a hostess cart with drop leaves, which extend the top area.

New Modern Style is Developing

Designer of the Month says "It will be as good ten years from today as it is now."/By CAROLYN KNUEMANN

"Modern is coming back strong." So believes Sanford Wallack, designer for Basic-Witz Furniture Industries, Inc., of Waynesville, Va.

"Today, we are building a type of modern that is basic in concept—that will be as good ten years from now as at the moment," he says. "Designers haven't touched the possibilities of the infinite variations in modern styling.

"Today's modern is not looked on as just a 'novelty', which it was in the minds of much of the public before. Rather, proportion, detail, finish and appearance are all being developed into a unified idea."

Wallack explained: "Five years ago modern to most people represented a big painted box—a kind of *art nouveau* something modernistic—furniture to be bought by the pound—big and bulky.

"Finishes five years ago included toners that were sprayed on, that fell into the pore and were wiped so that you didn't see the surface of the wood. Today we show the wood, don't hide it.

"Five years ago the public wanted big modern, big everything. Buyers went from space to space measuring cases, and the manufacturer who had the biggest case looking like the most value was the one who got the orders.

"Today, the emphases are on style, quality (construction and materials), and price—in that order."

As a designer who has styled a broad variety of goods from clocks, radios and locomotives for General Electric to passenger automobiles for General Motors and now case goods for Basic-Witz, Wallack is in a position to know American design.

Born in Cleveland, Ohio, and a graduate of the Cleveland Art Institute, he has worked in both the industrial and home fields for years.

Some of his ideas, are ahead of the times, he feels, but at Basic Witz "we don't spare the horses." An example is the Experimental Group which came out in January 1954 "when a bad market was anticipated."

"We wanted something different and good-looking but not gimmicky," explained Wallack. "As a former industrial designer of cars, it struck me that the best attention-getting device for the company would be to bring out something experimental, build around the Car Of Tomorrow idea—a projection. This wasn't meant to be a production piece necessarily, but something that would stimulate interest in consumers.

"My idea was okayed *carte blanche* by the Basic-Witz management. I had two months to do it in—just two months—and not a specific idea in my head. I got busy.

"The Experimental Group in cherry was the result—for a one-room apartment. It represented living, dining and bedroom furniture developed for a lot of living in a compact space. Examples were twin beds, upholstered and laid head-to-head in the display, and suitable for swinging around for convertible sleeping-or-sitting purposes. Another item was a living-dining room divider with white plastic areas, something of an innovation then in our price bracket."

Reported Wallack: "The group never went into production—we never intended it to—but we got a million dollars worth of publicity out of it. We loaned it to many retailers around the country to exhibit it as we had."

Another example of Wallack's flair for drama was in the high bookcase headboard, with fabric covered pads that flip down to become night tables. This piece was part of the Basicanna

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EXPERIMENTAL GROUP, below, designed by Wallack for Basic-Witz as a advanced design project in 1954 develops the ideas of dual-purpose furniture. Beds slip under head boards and serve as sofas. Also cabinet unit can be used as desk.

Sanford Wallack

of veneers produced and sold. It was quite a revelation, as the breakdown of figure and character represent the trends and importance of certain style concepts, accent areas and decorative embellishments.

Furniture historians call the 20's the end of Mission Style age, and the introduction of the boraxy waterfall front on case pieces. The specification of veneers paralleled these extremes as they certainly were a decade of strong figure or dramatic mass effects. In 1922, according to the walnut veneer totals, 45.6 per cent was rotary type with its ripply-watery grain that does not lend itself too well to matching systems which are so popular today. To obtain symetry and break up the variagated grain pattern, some slip matching was done. (Note illustrations on cutting and matching.) At that time, only 1 per cent of the veneer was quartered with the vertical or pencil stripe character. Flat sliced amounted to 25 per cent and 10 per cent in half round. Again, showing the importance of strong figure, 7.4 per cent was in stump wood which was widely used for accent areas.

The quartered or pencil stripe figure quadrupled in volume by 1929, but so did the overall industry production; so the percentages were similar. It was evident, however, the mood of the furniture was changing from the miscellaneous character of the rotary cut veneers to the matched sequence of flat sliced and half round which, in the aggregate, accounted for 61.7 per cent of the total. Rotary was now only 19.3 per cent. This last lush year of the roaring 20's saw the high mark for stump wood walnut with 17.5 per cent of the total and farmers all over the midwest dug old walnut stumps to accommodate the demand. Even burls of walnut reached a peak indicating the elegance which dominated interior decoration.

By 1930 the volume dropped by 50 per cent, but the need for strong character in veneer continued with the one exception—sliced walnut continued to take over from the rotary cut which by 1936 dwindled to 8.5 per cent. Half round and flat sliced moved up to 63 per cent and the more conservative quartered walnut with its pencil stripe reached a peak of 8.7 per cent of the total. Here is convincing proof the conservatism of the depression years was reflected in furniture buying.

The strong percentage (only a small proportion of walnut logs are suitable for cutting on the quarter) of the stripe figure was to carry on into the forties, but the 1936 proportion of stumpwood (at 17.2 per cent) was to diminish in three years by 60 per cent.

This was a period of ascendency for the 18th century English styles with its more formal matching of veneers. Borax and modern both dropped in popularity as furniture styles. Just before World War II, when walnut was placed on the critical list for gun stocks, the flat sliced and half round veneers accounted for over 80 per cent of the total, rotary was only 2.9 per cent, quartered was 9.5 per cent and the combination of stump, butts and burls in walnut was 7 per cent.

After World War II, when the walnut industry could again serve its furniture customers, volume jumped fourfold from the 1943 level and with it, the flat sliced veneers were classified into eight or 10 categories of narrow heart, wild heart, semi-figured, shell, leaf, cathedral and others to total 82.7 per cent of the volume. Quartered was a strong 10.3 per cent, as the high style modern took the market away from the 18th century English and French groupings. Walnut logs were seldom rotary cut and the half round system with it wide heart character was less desired.

The peak of popularity of the refined simple figure of striped walnut occurred in 1949-50-51 with over 18,700,000 feet being used in one year. In contrast, the highly figured walnut of burl, crotch and butt dropped to about 2,500,000 or 1.3 per cent of the total.

By the mid-50's, the walnut manufacturers began again to select out the figured woods into special categories. Of the flat sliced and half round 94.8 per cent was plain and 2.4 per cent was figured. Among the plain was a good quantity of semi-figured however. Alert furniture de-

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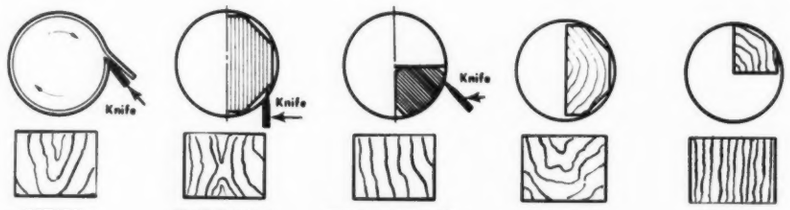

ROTARY

The log is mounted centrally in the lathe and turned against a razor sharp blade, like unwinding a roll of paper. Since this cut follows the log's annular growth rings, a bold variegated grain marking is produced. Rotary cut veneer is exceptionally wide.

FLAT SLICING

The half log, or flitch, is mounted with the heart side flat against the guide plate of the slicer and the slicing is done parallel to a line through the center of the log. This produces a variegated figure.

QUARTER SLICING

The quarter log or flitch is mounted on the guide plate so that the growth rings of the log strike the knife at approximately right angles, producing a series of stripes, straight in some woods, varied in others.

HALF-ROUND SLICING

A variation of rotary cutting in which segments or flitches of the log are mounted off center in the lathe. This results in a cut slightly across the annular growth rings, and visually shows modified characteristics of both rotary and plain sliced veneers.

RIFT-CUT

Rift cut veneer is produced in the various species of Oak. Oak has medullary ray cells which radiate from the center of the log like the curved spokes of a wheel. The rift or comb grain effect is obtained by cutting perpendicularly to these medullary rays either on the lathe or slicer.

Walnut Veneer Shipments 1922-1960

	Rotary	Half Round	Flat Sliced	Quartered	Stump	Crotch
1922	56.2%	10%	25.4%	.8%	7.4%	.1%
1925	42%	13.5%	37%	1%	6.5%	—
1929	19.3%	16.3%	45.4%	1%	17.5%	.5%
1932	12%	14%	51%	2.5%	17%	3.5%
1936	8.3%	9.7%	54.9%	8.8%	17.2%	1.1%
1941	2.9%	6.3%	74.3%	9.5%	6.8%	.2%
1946	.07%	3.5%	82.7%	10.3%	3.3%	.1%
1950	.2%	2.2%	88.2%	8.3%	1.1%	.03%
1955	.01%	11.8%	86.1%	1.8%	.2%	.01%

	Figured Sliced and Half Round	Half Round	Flat Sliced	Quartered	Figured Quartered	Other Figured
1956	2.4%	11.8%	83%	2.5%	.03%	.3%
1958	1.4%	13.5%	83.4%	1.3%	.02%	.4%
1960	1.1%	11.9%	85.2%	1.2%	.02%	.5%

Courtesy of the American Walnut Manufacturers Assn.

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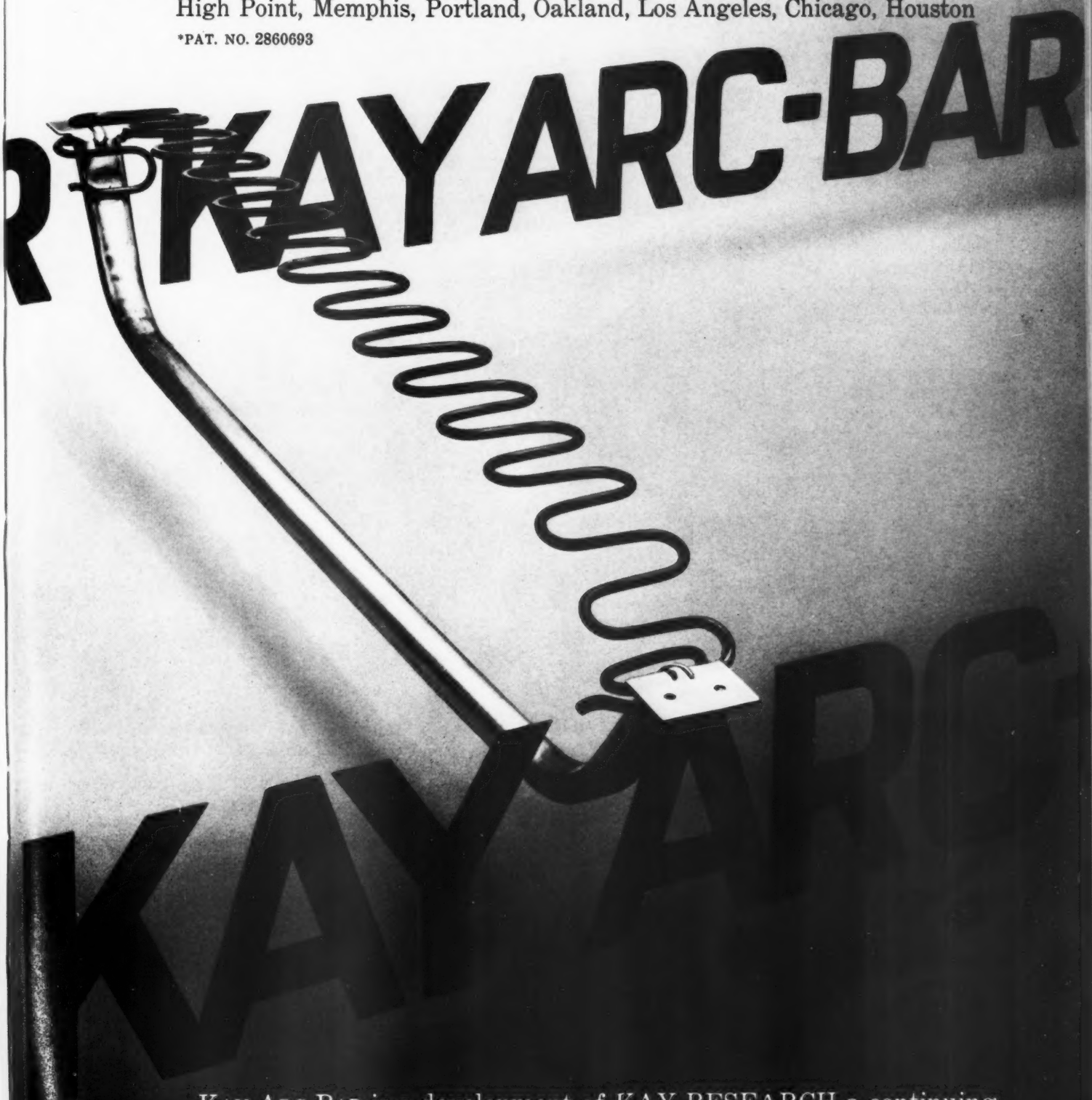

KAY ARC-BAR is a development of KAY RESEARCH a continuing program of products in the making for the making of finer furniture.

By Alfred DeBat, Associate Editor

First nighters at the opening of New York's swank Tower Suite Restaurant in the new Time & Life building stared in amazement at their dinner tables. The thin table tops glowed in a cheery, glare-free light without the aid of any exterior light source.

What they witnessed was one of the first uses of electroluminescent lighting—a new application of an old principle which turned the glass table tops themselves in to a new type of "light bulb."

Although only recently introduced on a commercial basis the new electroluminescent lights, in the form of thin glass panels up to 30 in. square and 24 in. by 36 in. rectangles, are being used by custom furniture makers and designers for ultra modern tables, bars, shelves and occasional pieces. Perhaps in the near future some progressive furniture manufacturer will add electroluminescent pieces to his line.

Much of the research in developing luminescent panels for furniture is being done by Westinghouse, who supplied the material for the Tower Suite under the tradename Rayescent. Similar luminescent materials produced by other manufacturers include: Sylvania's Panelescent lamps, Radio Corp. of America's Panelray lighting, and General Electric's electroluminescent lamps.

"Each panel consists of an extremely thin layer of electroluminescent phosphor .002 in. thick, which is applied on a glass plate one-eighth in. thick. When electricity is applied the panels glow in soft color tones," explained John B. Farese, manager of entertainment tube products, RCA electron tube division. "The brightness of the panels depends on the color type as well as the applied voltage and frequency. The panels are operated on AC current, either 120-volt or 240-volt."

There are no filaments, tubes or vapors and practically no heat is produced by the panels. Not only are the lamps virtually fail-proof, but current drain is almost negligible.

Electroluminescent panels are available from various manufacturers in six different colors—green, blue, yellow, white, orange and red. Orange and red colors are produced in panels by the means of supplementary luminescent materials, and the colors are currently the most difficult to reproduce.

Green is presently the most easily created color, and the largest, brightest panels are usually found in this hue, although most luminescent panel manufacturers offer engineering services to other firms and designers to develop special lamps for specific applications in both special sizes and colors. The luminescent producing companies also offer experimental samples to manufacturers.

The tables by Westinghouse at the Tower Suite were constructed in two sizes, reported Philip F. Dietz, manager of Westinghouse's Rayescent lamp department. One table style was 51 in. in diameter, the other style was 42 in. in diameter. The circular table tops were made of four Rayescent lamps covered by a protective plastic sheet.

Westinghouse reported that in addition to the various colors, individual lamps may be multicolored, and made in practically any two-dimensional shape. Decals or silk screening can be applied to the surface to produce any desired design.

TO PAGE 69

WESTINGHOUSE CO. employe puts electroluminescent "light bulb" in an infra-red oven to bake phosphor coating in the electrical conductive film. When current is applied, panels glow.

NEW YORK'S Tower Suite Restaurant, right, features electroluminescent-paneled tables, one of the first commercial uses of this new lighting material in furniture. Lower right, Westinghouse, creator of the Tower Suite tables, also experimented with others including this self-illuminated occasional table.

Electroluminescent Lighting Offers New Opportunities For Unusual Furniture.

New Laminate Made

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• *Wolf foot high cloth cutters are shown below in operation cutting seating material at the Hamilton Cosco plant, Columbus, Indiana—Manufacturers of high quality folding bridge furniture.*

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FOR DATA CIRCLE FDM NO. 1968

Introducing Another New Editorial Feature

More than ever, upholstery fabrics influence appearance, performance and sales of all types of seating. Because this is important to you who manage, FURNITURE DESIGN & MANUFACTURING is expanding editorial coverage of this field. In keeping with this magazine's concept we are combining meaningful reporting with bold visual presentation. The new, the classic, the avant-garde, the staple, the promotable, the practical—and always the significant in upholstery fabrics—will be expounded each month in this new department:

FABRICS IN FURNITURE DESIGN

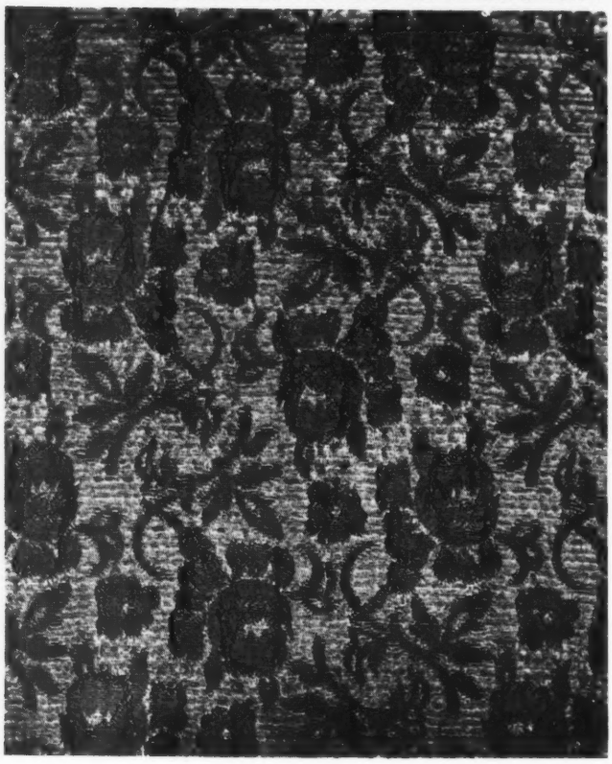
FABRICS IN FURNITURE DESIGN

HOW TO GET THE MOST OUT OF THIS NEW SECTION:

To better stimulate your ideas, illustrations of fabrics are grouped into style categories. Supply sources are given in captions. For fuller details, refer to text under appropriate supplier name. Cross references also appear in text.

PATTERN JAYBEE BY ALBERT J. BARTSON, INC.

PATTERN LILLE BY EASTERN FABRICS CORP.



THE ORINOKA MILLS. The Orinoka line is as usual replete with soundly styled and soundly constructed staples in its field. In addition this season it has gone adventuring —successfully—with unusual and imaginative combinations of contrasting yarns and colors. Certain refinements will be observed in some of the weaving techniques.

A three-color woven trapunto cloth—opposite page, lower right—gives the appearance of hand-quilting. The Renaissance design is woven in two colors and the series of seven color combinations appear on eggshell grounds. Color combinations include beige and tangerine; brown and persimmon; green and blue. The fabric is 100% cotton and 54″ wide. Retail price, about $9. The design is placed so that the material can be railroaded.

A Florentine velvet adaptation is executed with three spun rayon colored fillings on a warp of mercerized cotton —opposite page, top left. Pattern is a detached floral and the color combinations are by no means trite. Among the ten colors are tangerine, brown and orange on an eggshell ground; blue and green on an olive ground; royal blue, green and raisin on a blue ground. Fiber content is 32% cotton and 68% rayon and the material is 54″ wide. Retail price hovers around the $9 mark.

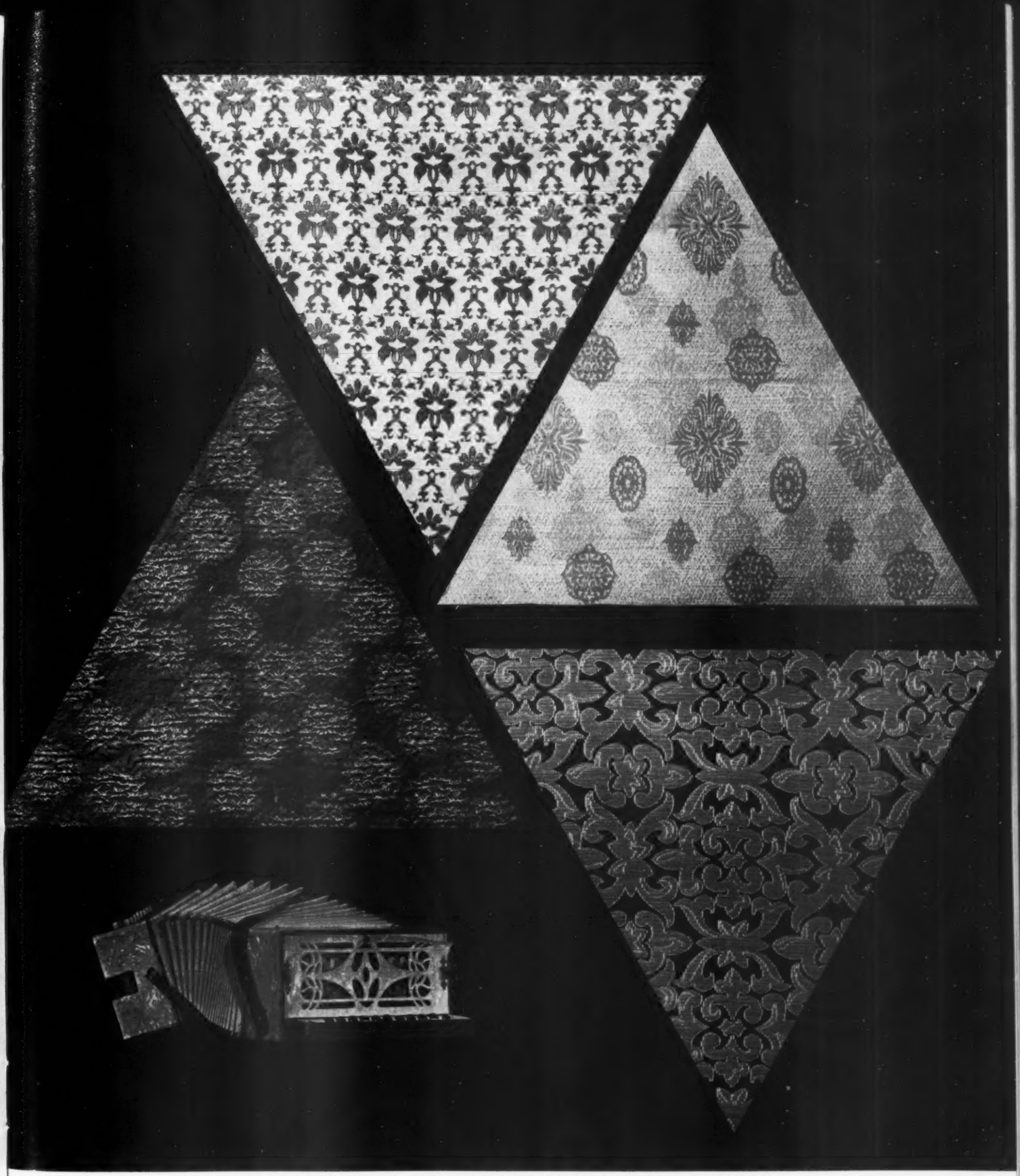
A heavy-textured fabric—upper right, page 35—achieves a mildly iridescent and definitely three-dimensional effect through the use of three different filler yarns:—a fancy spun rayon, a two-ply heavy cotton and dip-dyed rayon. The versatile color range includes earth tones, bright blue and violet. The 54″ material will retail for about $8.

Two other "worthy-of-notice" entries in a big line are: a jacquard with a snowflake motif on an antiqued ground, $5, and a large scaled traditional damask on a two-color cotton warp with effective contrast between dark figures and a light ground in the $5 area.

ALBERT J. BARTSON, INC. The most significant elements of this mill's production seem to be two comprehensive groups. One is a long line of Bemberg damasks in the $2.95 to $3.95 retail bracket and an even longer line of Nylon damasks. Nylons combined with spun rayons are in the $5.95 area. The 100% Nylon materials retail at $5.95 to $7.95. In so large and varied a production it is difficult to focus on individual items but the following three are highly regarded by both producer and customer:

A spun rayon fabric on a Bemberg warp named "Jaybee" is illustrated in brown, this page. Its non-directional pattern is well adapted to channel-back furniture and the design quilts admirably for solid back pieces. The fabric is 54″ wide and comes in a well defined range of 15 contemporary colors.

TO PAGE 33



CLOCKWISE FROM TOP: PATTERN 9156 BY THE ORINOKA MILLS; TRACERY BY BARTSON; 9249 BY ORINOKA; LOKPUT IRIDESCENT BY SUNBURY TEXTILE MILLS.

The Deeply Textured Look

Imaginative weaving techniques produce dimensions in depth: artful combination of yarns and colors achieve deep richness, top left; contrasting bright and dull-faced yarns attain shadow effect, top right; woven trapunto cloth has hand-quilted appearance, lower right; shrinking of yarns produces puffed effect, lower left.

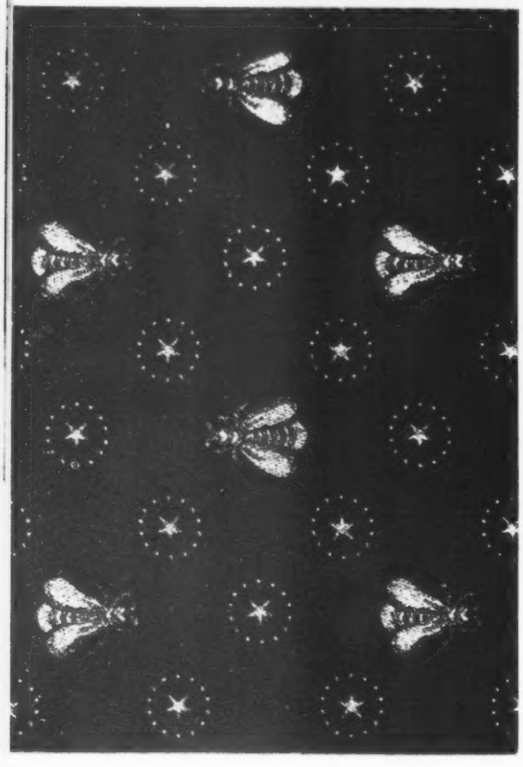
FABRICS IN FURNITURE DESIGN

By HELEN LITTLE

After viewing literally scores of current offerings by leading suppliers, Editor Little has selected these as being noteworthy and timely. Recommendations of suppliers who furnished the fabrics to be photographed are especially acknowledged with thanks.

All photographs in this section by
R. A. HELMERS
Editor

PATTERN NAPOLEONIC BEE BY BARONIO FABRICS, INC.



TOP: PATTERN DIXIE BY SUNBURY TEXTILE MILLS; RIGHT: AMERICA

Federal American Revival

Colors reminiscent of later 18th century America are combined with patriotic motifs in these fabric offerings, anticipating a swing to the more elegant styling

IGHT: AMERICAN EAGLE BY BARONIO; LEFT: ADAM BY BARONIO.

BARTSON/FROM PAGE 30

An all Nylon cloth, "Tracery,"–54" wide–comes in 12 high style colors ranging from charcoal to medium blue and including the brown to gold scale. The shadow effect is achieved by weaving the conspicuous element in a bright yarn and its reflection or "shadow" in a dull faced yarn. The impression has subtlety and a feeling of richness. It is shown on page 31, top right. Designs are spaced so as to allow railroading of the material. A complete line of solid cloths in the same colors is available in the $7.95, retail, locality.

A material named "Apache"–top left, page 35–has the look and feel of wool and is reminiscent of Scandinavian wool fabrics. A strong sense of texture has been accomplished by the use of four filling colors woven in various jacquard effects. Fiber content is 63% Nylon and 37% spun rayon. Width: 54". Colors range from beige through brown and include red and blue combinations.

BARONIO FABRICS, INC. Manufacturers may do a double take when they look first at four classic patterns from a jacquard loom which are being introduced by Baronio. The designs have been woven lengthwise rather than crosswise in the traditional manner. As a result the furniture manufacturer will be able to "railroad" the goods for economical cutting. Seams on spacious surfaces (the backs of sofas, for example) will be eliminated as a result of this process.

To make the premiere noteworthy, excellent patterns are on exhibition. Pictured are:

"Marie Antoinette"–top left, page 36–has a fascinating French stripe in a drawing room mood. It is 55%

TO PAGE 34

PATTERN DANDY BY SUNBURY

of the Federal period. Some suppliers are offering solid goods to correlate patterned fabrics. Weavers have creatively used both natural, man-made fibers.

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FOR DATA CIRCLE FDM NO. 1948

FABRICS IN FURNITURE DESIGN

BORONIO/FROM PAGE 33

cotton and 45% rayon on a 60% cotton warp. The material is shown in eight colors and additional plain-woven fabrics in the line have careful color coordination.

"Napoleonic Bee"—shown in color, on page 32—"Adam" and "American Eagle" are high style projections of familiar themes, interpreted without academic restraints. These are 54" wide, retail at about $12 a yard and all are available with or without Scotch Guard finishes. They are sold exclusively to furniture manufacturers and through fabric jobbers. Content is 55% cotton and 45% rayon for "Napoleon Bee" and "Adam" and 60% rayon and 40% cotton for "American Eagle." The latter patterns are illustrated at the bottom of pages 32-33.

Colors range from light beige through mauve. The same colors will be seen in solid goods in coordination with patterned jacquards. The patterns have obviously been carefully worked out.

SUNBURY TEXTILE MILLS. Will a revival of the Federal American period in furniture follow—as it might logically—the recent Early American-cum-Provincial groundswell? Will the merging of Provincial with modified Contemporary styles meet at a point which seems to be a compromise resembling in colors and motifs Federal American styling? If so (and this is by no means certain), some of Sunbury Textile's newly presented items may be harbingers of things to come.

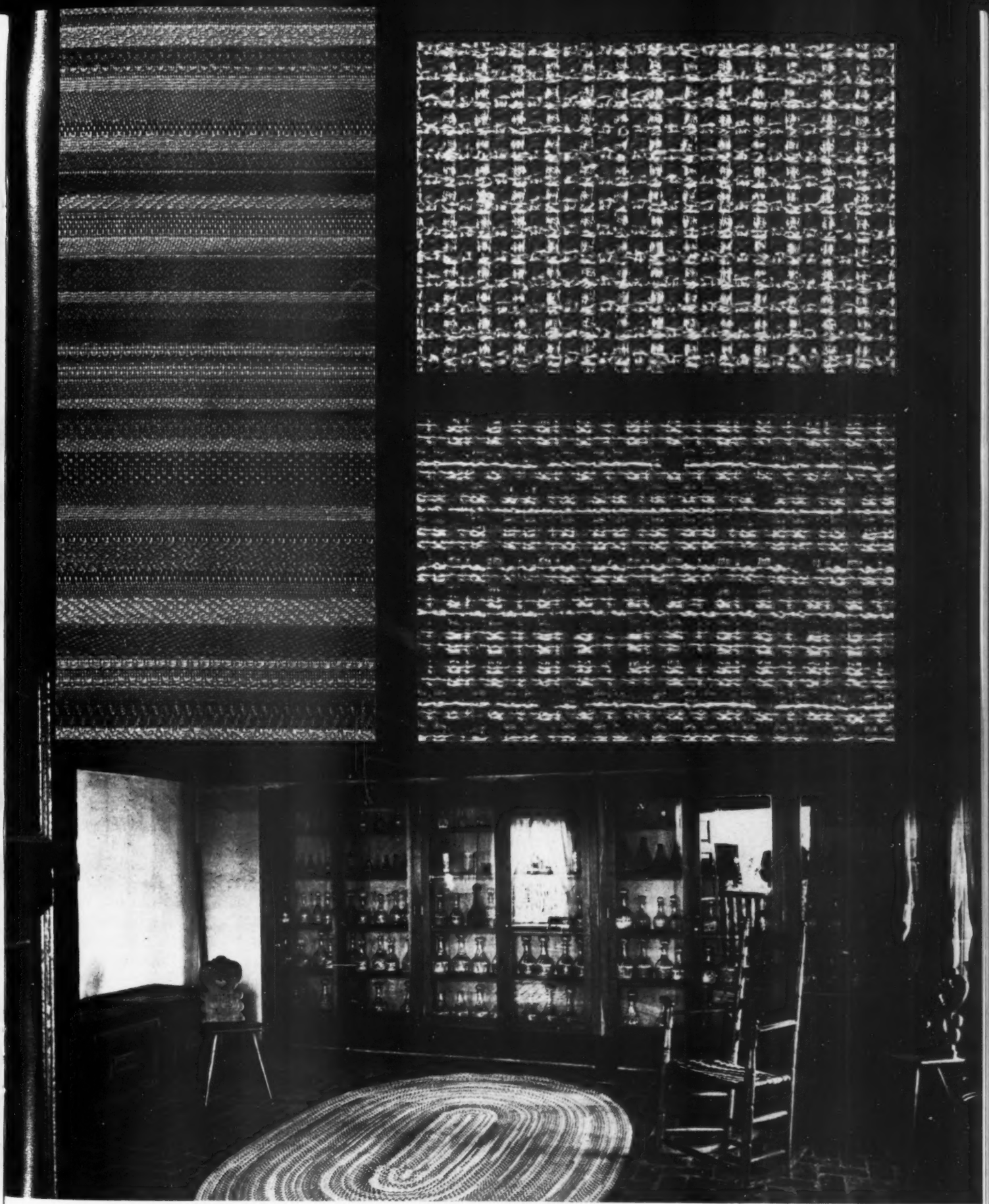
The iridescence of the firm's latest textured nylons, the feeling of restrained elegance, the approach toward a modern version of formality, make this speculation worth considering.

The new Lokput process of Sunbury has created a quilted look in a brilliantly iridescent textile now being shown in 45 colors—illustrated lower left, page 31. By use of contrasting warps (for example, a peacock blue filler and a red warp) the fabric takes on a rich three-dimensional effect with a shiny surface which looks almost metallic. Fiber content is 95% rayon and 5% Velon Saran. The material is 54" wide and retails for about $9. The small over-all patterns lend themselves to easy and economical cutting. This cloth takes the name of "Lokput Iridescent."

"Dixie"—shown at the top of pages 32-33—another Sunbury newcomer makes its debut in eight classic designs; 40 colors are involved. The pattern pictured is 54" wide and usable in either the vertical or horizontal way. Retail price: about $10.

"Dandy" pattern—shown in color, page 33—is addressed to manufacturers of Federal furniture or lines in generally

TO PAGE 36



LEFT: PATTERN APACHE BY BARTSON; TOP RIGHT: PATTERN 18997 BY ORINOKA; BOTTOM RIGHT: OPAL BY EASTERN FARBICS.

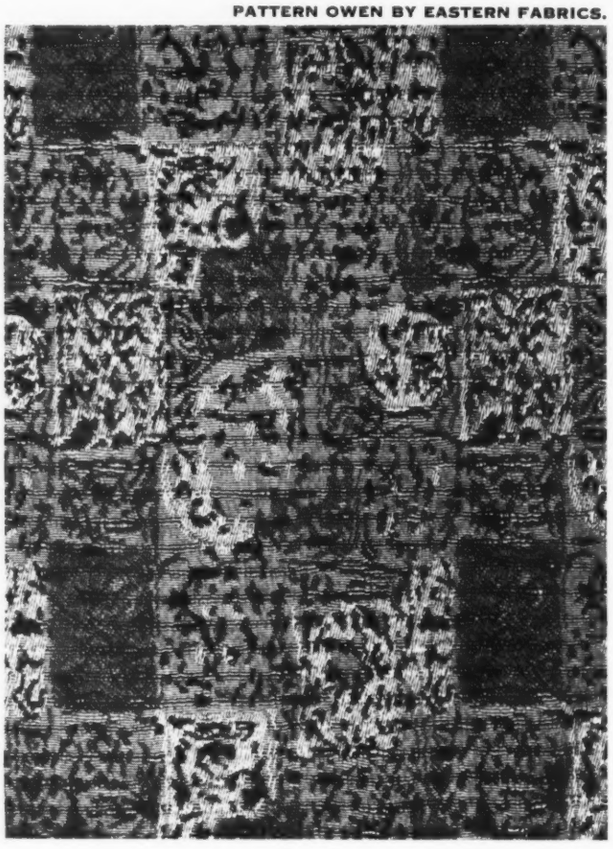
The Homespun Look

Unique yarn-weaving combinations attain the wool-like appearance and feel of the fabric, left, as well as the heavy-textured, three-dimensional look of the pattern, top right. Various monochromatic shades of flat and slubbed yarns provide the handcrafted appearance in the design, lower right; for modern or Early American.

FABRICS IN FURNITURE DESIGN

PATTERN MARIE ANTOINETTE BY BARONIO.

PATTERN OWEN BY EASTERN FABRICS.



SUNBURY/FROM PAGE 34

the Federal style. It has the formality which that period calls for as opposed to the more relaxed Early American.

Another cloth which will be featured by this firm is a textured Damask of Celeperme warp and spun rayon filler. Its patterns follow the modern school without strictness or academic severity. It has a liberal color scope with many bright and clear tones as well as some in the lilac-to-deep-violet range. Certain attractive non-conforming items flash with a brassy gold, a bright orange and a moss green.

A textured Nylon and cotton matelasse with an all Nylon surface will retail for about $13. The width is 54″ and its colors reach a total of 40.

EASTERN FABRICS CORP. Ingenious combinations of fibers and special weaving techniques have created the impression of deeper textural dimensions in several choice materials in the line of Eastern Fabrics. The use of both matching and contrasting colors has emphasized these effects. Eastern's line is comprehensive and replete with pleasant surprises.

A textured tweed in various monochromatic shades attains a look of handcrafted distinction through the use of slubbed and flat yarns which produce interesting highlights. "Opal"—shown lower right, page 35—appears in seven colors including champagne, aqua, sepia, gold and bittersweet. It has been effectively used on both modern and early American furniture. Width: 54″; price: about $3.75; fiber content: 35% rayon and 65% cotton.

"Lille"—in color, page 30—is one of a series of four patterns with a quilted look which makes it especially simpatico with Provincial furniture. Woven with a velon back, the material is then treated to pucker the face of the material resulting in the quilted look of the process, "Puffs." The four patterns come in six colors: champagne, natural, gold, nutmeg, aqua and celadon. The 54″ fabric sells at about $3.75.

"Owen"—lower left, page 36—is a fabric woven on a rayon warp; the fillers are a combination of cotton and rayon yarns in shadings and tones which stress both texture and pattern. The appearance of depth comes from the use of a seed yarn, a component of the filler. The material has a rather formal look and has been well received for use on Traditional furniture. Content is 28% cotton and 72% rayon. This 54″ fabric is also in the $3.25 price area.

In addition the firm has a new collection of 100% Nylon fabrics addressed primarily to modern furniture but some of the items have been successfully applied to traditional designs.—*Helen Little.*

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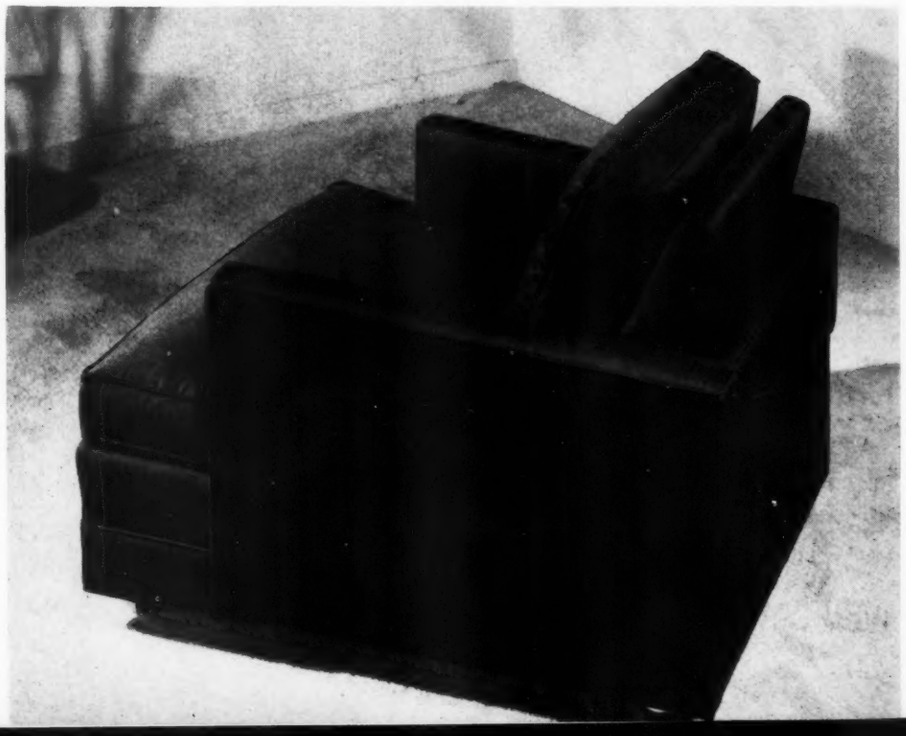
FOR DATA CIRCLE FDM NO. 1940

SUPERLATIVE detailing on this Valley high back chair, directly above, shows the handsome qualities of MacGregor's design, with its rounded arms, exposed wood bases, and double welting. The chair is upholstered in green-gold slubbed silk fabric. Above right, a five-ft. chaise divan with head and foot boards uses large trapunto quilted cushion against the head and a round bolster at the foot. Drawing inspiration from the Broadway musical *Camelot,* it has a scalloped base and is upholstered in gunmetal hammered satin. At the right, a deep arm chair has a loose pillow back and T-shaped seat cushion. The fabric is a dark blue silk with a scalloped pattern overlaid on sides and back.



Backstage in Fabric Selection

Designer reveals how he picks upholstery fabrics for his creations/By Helen Little

How does a furniture designer choose an upholstery fabric? It happens in an infinite number of ways—new fabrics from the mills may inspire him, a new color may appear in women's fashions, or even a musical on Broadway may be responsible.

Designer Norman MacGregor, who works closely with Valley Upholstery Corp., revealed some stimulating insights recently while commenting on "the dazzling array of new colors and textures now available, which can be the inspiration for the manufacturer as well as the designer of upholstered furniture."

MacGregor said he is so giddied by color that sometimes he becomes almost color blind when trying to select the colors and fabrics for a new line. "My trouble starts," he commented, "when I start trying to eliminate colors from the abundance of them now available."

Current improvements in the quality of colors and color combinations give retailers a tremendous selling advantage. A retail floor stocked with upholstery colors fetch more excitement than they did in the "rose, beige and brown" and "in-the-muslin" period. "It isn't necessary to point out," MacGregor reported, "that salesmanship and showmanship are related —whether in a store or a theater."

Rarely does a stage or motion picture production project its influence into the apparel or home furnishings industries. The impact of *Gone With The Wind* of more than twenty years age is of course a legend. *Camelot*, the Lerner-Loewe musical which opened last winter has given MacGregor new color inspiration; its costumes and stage settings won even more critical approval than the words and music. The gemlike hues of *Camelot* are featured in the new MacGregor collection. They include variations of persimmon, gold, pale orange, turquoise, tangerine, peacock blues and red. Included are brightened up "earth colors" and a deep bottle green. There are stria and pencil stripes in such combinations as bright blue and gold. The fabrics themselves range all the way from herringbone tweeds to iridiscent silks. Many of the shaggy fabrics have a silken luster with a sheen like that of *Camelot* costumes. Dressmaker attention has been given such details as button tufting, trapunto and couble welting. Comfort is assured by extra deep seating and by combinations of down and rubber filling. At customer's request, fabrics are treated with the Scotch Guard process.

MacGregor began his association with Valley nearly 20 years ago and has been energetically at his drafting board ever since. Recently he completed a 200-piece collection for the Valley Upholstery Corp.

Through the intervening years, he has seen a generation of furniture come into being and has made friends with a generation of ideas concerning what people want in the way of furniture and how it can best be made.

Fine furniture was being made 20 years ago but much of it would cause no riot among consumers today, said MacGregor. One era was ending and another was about to begin. The austerities of the depression were giving way to the new austerities of war deprivations. But after the war an expanding economy began to demand in furniture a touch of elegance along with the technical or functional excellence that good modern styling had achieved.

Norman MacGregor

For some time there was a hair-splitting insistence that period furniture, Early American and other provincial furniture be manufactured with the faithful facsimile of the most minor details. But in the last few years, designers have begun to purge themselves of this obsession. As a result, in both fabrics and furniture, modern has borrowed from provincial and provincial from modern. Traditional or period design has provided ideas for both and has received ideas from both. There has been intermarriage among furniture styles and we have seen attactive progeny come out of such unions.

MacGregor points out that Americans have become a much more cosmopolitan people since the war. They have travelled more and those who didn't go abroad got interesting ideas from magazines and newspapers, television and the movies. Some of these facts create problems for the designer but they also liberate his imagination from dogma which once restricted him.

Technology has been a new liberating influence in furniture design. As a small illustration of a large influence: glued-on double welting has been largely the benefactor which made possible so many exposed wood frames; designers who have an appreciation of the beauty of wood are grateful for this advantage. The old brass-tack method of applying upholstery was an expensive, time-consuming drudgery. It raised the cost and the effect was "busy."

"The public," said Mr. MacGregor, "is becoming more knowledgeable—more perceptive of the fine details of good craftsmanship. People are also more sensitive to color than ever before."—*Helen Little*

Wide Product Range At Simmons Plant

Contract and Hospital Furniture Produced in Munster Factory

By Alfred DeBat, Associate Editor

Plant photography by author.

Part two of the Simmons Munster plant story concludes this series, which began last month with a report of the factory's soft goods operation.

The hard goods division of Simmons Munster plant occupies 619,000 sq. ft.—almost two-thirds of the sprawling 28-acre factory's production facilities.

Manufacturing contract and hospital furniture, products vary from automated motor-operated hospital beds to motel occasional tables. More than 1,000 tons of steel are used each month by the company—mainly by the hard goods division, but a percentage of this also goes into mattress spring construction.

A large number of products are metal case goods destined to fill hospital rooms, motels, hotels, dormitories and other institutional facilities. Complete hospital patient room furnishings are made by Simmons, ranging from chairs and bed side cabinets to overbed tables. Dormitory and motel products include metal cantilevering desks, built-in metal wardrobes and suitcase stands.

Steel is purchased in sheets, strip, wire and angle from several major suppliers, including U. S. Steel, Bethlehem Steel, Inland Steel, and Republic Steel.

Much of the furniture construction is tubular, either round or square, and Simmons operates nine tube mills of its own design to produce all necessary tubing. More than 400,000 line ft. of tubing is produced each week. Further processing is done with Pines Engineering Co., and Wallace Machine Co. tube benders.

Draw and punch presses, made by a wide variety of manufacturers, including Wells, Toledo, Verson, Cincinnati and Bliss, are used in the production of case goods, and some chair and sleep product parts.

Many different metal products are made in the hard goods division. Central division manager, L. H. Weyrough commented, "Every contract furniture buyer wants something slightly different, and we can give him what he wants. But, this is also the reason there cannot be more automation in some areas of production. We make a remarkably wide spectrum of products for customers."

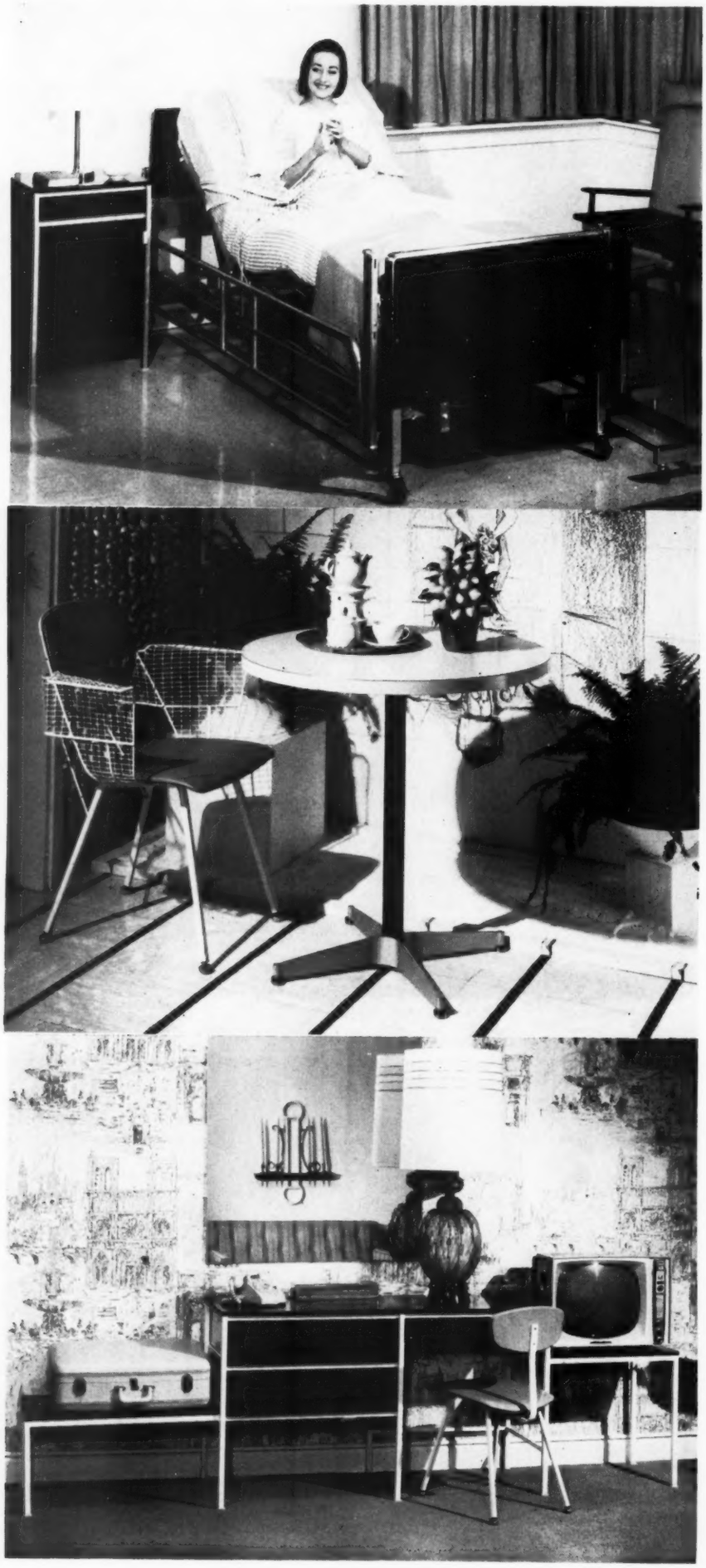
The great amount of hand brazing done is an example of Simmons' drive for flexible, high-quality production. Although some helical and arc welding is done, the majority of metal joining is by brazing with Taylor Winfield welding units. One engineer remarked, "Only with brazing can we get a completely smooth and seamless joint, and the company will accept nothing less than the best." The work is done by skilled women brazers on a production line where style changes may be quickly made.

Many of the small assembly parts are made by the company with units such as Cleveland automatic screw machines.

After furniture units are assembled various finishing methods are employed. Hospital bed frames, Hide-A-Bed mechanisms and other lounge and sofa spring construc-

TO PAGE 42

GRAYCO MIXERS AND PUMPS move hard goods division paint from central mixing room, pictured below, to spray booths, seen upper right on facing page, where case goods are being sprayed by DeVilbiss gun. Directly below, Cecil Van-Meter, assistant foreman of development lab, tests automated hospital bed motors under load conditions. Most metal contract furniture is brazed together, lower left, while tube bender operator, lower right, forms tubing made on in-plant tube mill.



SIMMONS PLANT
FROM PAGE 40

tions are dip coated. Smaller pieces, such as case goods and chairs are spray painted. Manual grain printing is used to decorate a portion of the Simmons case goods line.

Items are first automatically sprayed with Parker Bonderite, then conveyed to a second automatic spray tunnel for a natural grey enamel undercoat. From here furniture is transported by overhead conveyors to Binks spray booths where careful spraying is done by workers with DeVilbiss air guns. Grayco paint mixer and pumps are used to move paint from a central mixing room to the many production spray booths. Each operator has four different paint color lines at his finger tips for the mixed product runs being simultaneously conveyed through the finishing line. Thousands of gallons of DuPont paint are used, costing more than $18,000 each month.

Some hospital furniture parts are cadmium plated in huge plating tanks of Simmons own design. With expanding production, the firm expects to add a second plating process for chrome plate this year.

A complex overhead conveyor system was created for Simmons by Mechanical Handling Co., Detroit, Mich. The system allows each furniture carrier to be coded so it will arrive at the correct paint spray booth. If the booth dock is filled, it will travel to an alternate one or return to the moving system until a spot is available at one of the correct spray booths. The plant operates more than three miles of conveyors—1,670 ft. are in the soft goods division, and 14,318 ft. in the hard goods plant.

After finishing, furniture is conveyed to sub-assembly departments where various detail work is done. Hospital cabinet and table surfaces are covered with General Electric Textolite, for example. U. S. Rubber

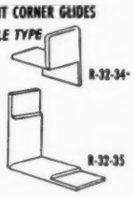
TO PAGE 72

RANGE OF PRODUCTS made at the Simmons Munster plant, hard goods division is shown at the left. At the top is a Simmons automated hospital bed which can be raised and lowered, and put into treatment positions by a hand control. Examples of contract division chairs and tables are seen in the middle photo. Table top is a Fiberesin laminate. Modular hotel and motel furniture featuring desk, cabinet and suitcase stand is typical of Simmons institutional line.

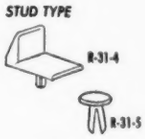
● TABLE PINS

● FRONT CORNER GLIDES

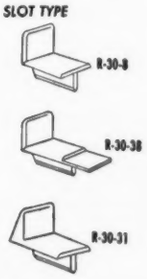
STAPLE TYPE



STUD TYPE

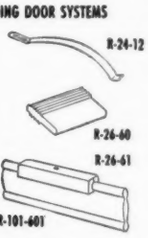


SLOT TYPE



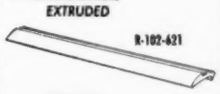
● TIPPER GLIDE

● SLIDING DOOR SYSTEMS



● PANEL RETAINERS

EXTRUDED

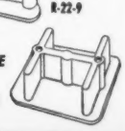


BUTTON

● HANGING DRAWER SYSTEMS

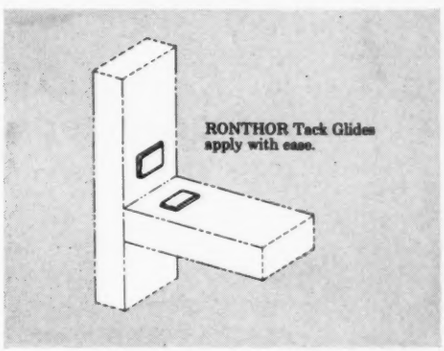
●

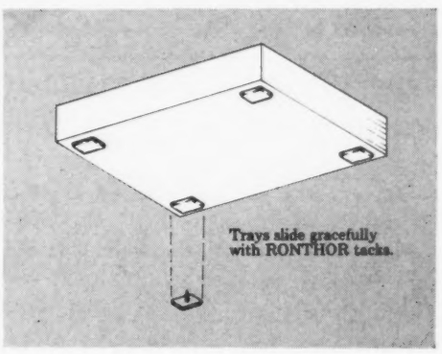
DOUBLE



Ronthor Rectangular Tack Glide R-33-16
½" x ¾"
Thickness .08
Point 5/16"

Ronthor Round Tack Glide R-33-17
½" Diameter
Thickness .08
Point 5/16"

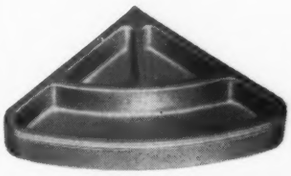




RONTHOR SELF-LUBRICATING TACK GLIDES

Introducing a new series of low-cost tack glides manufactured of durable Raylex which needs no lubrication ever . . . yet provides a lifetime of smooth efficient gliding action under the heaviest usage. RONTHOR Tack Glides are applicable to countless uses in the furniture, cabinet and related industries . . . and throughout all industry wherever and whenever abrasion problems exist. These glides have been engineered for economical installation and are easily inserted into the hardest of woods. Your inquiries on specific applications of glides will be carefully analyzed and considered at the Ronthor Reiss Research and Development Center.

Address inquiries to RONTHOR REISS CORP., Industrial Products Division, Dept. FD-2, 111 Fourth Avenue, New York 3, New York



RONTHOR TRAY R-11-83

RONTHOR TRAY R-11-86

RONTHOR TRAY R-11-89

RONTHOR TRAY R-11-82

WOOD AND METAL CENTER GUIDES WITH SELF-LUBRICATING BACK BEARINGS

SERIES 22

SERIES 25

SERIES 26

METAL TO WOOD GUIDE

SERIES 15

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FIRM _____

ADDRESS _____

CITY _____ STATE _____

FOR DATA CIRCLE FDM NO. 1956

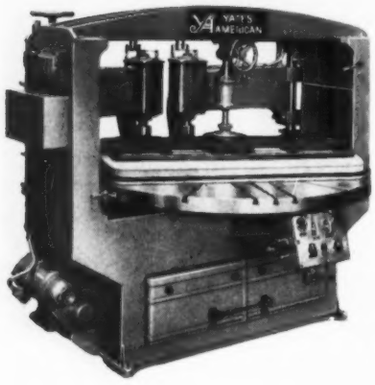
- **Materials**
- **Equipment**
- **Supplies**
- **Components**
- **Literature**

FDM IT'S NEW

For more information on items listed in the IT'S NEW Columns use the handy Reader Service Card in this issue. Complete details on these items will be sent to you by the manufacturer.

Shaper Speeds Production, Lowers Material Handling

A low-investment, versatile Model R-72 automatic shaper equipped with two independent direct motor driven cutter heads for faster production and reduced material handling has been added to the woodworking machinery line from Yates-American Machine Co. Design of the machine permits dual shaping and edging operations and single or multiple-station set-ups. Spindles operate at 9000 r.p.m. permitting faster feeds and use of smaller cutters for smooth, quality finishes. Powered by 6 h.p. motors, spindles accommodate a wide range of cutter equipment and a maximum cutter block length of 4 in. The unit is equipped with heavily ribbed precision machined cast iron table, 68 in. in diameter, providing a standard swing of 75 in. Table speeds are infinitely variable within the range from 25 to 72 seconds per revolution.



For More Information Circle Reader Service Number 834

Wide Belt Conversion Unit

A Nylund wide belt conversion unit, designed to convert endless drum sanders to wide belt sanding, was developed by Elford Plywood Machinery Inc. The unit offers patented smoothing bar, off-set contact cutting roll, cutting and smoothing on a single pass through machine. Manufacturer reports the unit is easily adapted to the bed section of most endless bed sander models.

For More Information Circle Reader Service Number 835

Air Operated Cut Off Saw For Random Width Lumber

An Industrial Model 3563 air operated cut off saw, designed for cutting random width lumber with automatic or semi-automatic cycling, was announced by Tri-State Machinery Co. The unit has stroke speeds variable up to 90 cuts per minute and is offered for either right-hand or left-hand material flow. Maximum cut off capacity is 4 in. by 17 in. with 18 in. diameter blade, or 3½ in. by 18 in. with 16 in. diameter blade. Length of stroke is adjustable to seven different positions in ½ in. increments. The machine is equipped with standard 5 h.p. drive motor, magnetic starter, electrical foot control switch, and air cylinder.

For More Information Circle Reader Service Number 836

Circular Saw Features Performance and Safety

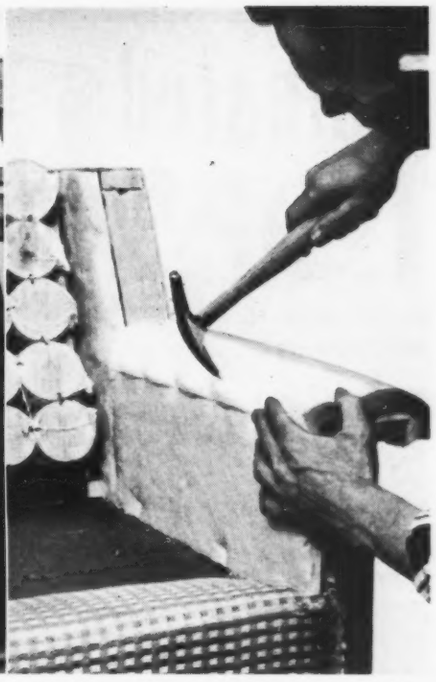
A Weinig 750 SES heavy-duty circular saw, reported to be highly accurate in cut and controls, is being distributed by Joyce Research and Development Corp. The machine has improved stop gauge to permit adjustments for both coarse and ultra-fine cuts. Saw spindle offers dual speed operation, 3000 and 4500 r.p.m. Saw spindle brake facilitates blade changing and table and blade adjustments are easily reached and ultra-sharp in operation, manufacturer reports. The saw blade, tiltable to 45° has positive safety lock and overhead guard tilts with the blade. Maximum blade diameter is 18 in. and maximum cutting height with vertical blade is approximately 5½ in., width 28 in.

For More Information Circle Reader Service Number 837

TO PAGE 46

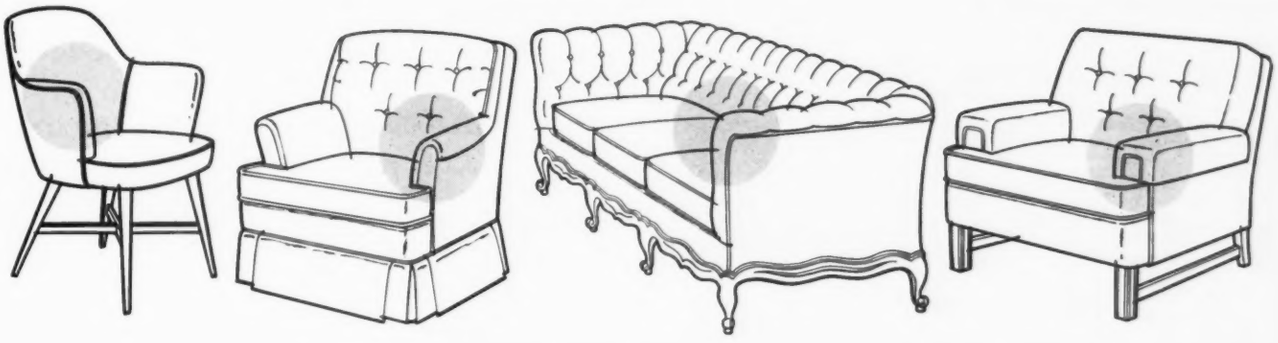
Choice of product types appropriate for *all* upholstered arm styles and designs.

Tufflex cushioning can be pre-cut for perfect fit—ready to use.



Easily used—excellent in combination with other cushioning products.

whatever the arm style... there's an



engineered Tufflex® cushioning to cut costs

The variety of Tufflex cushion materials . . . thicknesses ⅛" to 3" and choice of densities . . . lets you easily select the proper cushioning for your specific upholstery need. Tufflex cushioning can be readily fabricated . . . cut to exact size with firm edges. Available with a variety of insulator backings, Tufflex padding won't pull loose from staples or tacks . . . won't sag, bunch, or shift.

Like many designers you will find in Tufflex padding an ideal topper over hair or as compression resistant base for soft toppers.

Watch assembly time go down with Tufflex cushioning! Pre-cut Tufflex padding is ready to apply, fits perfectly without waste, and contours easily without hand shaping.

Raymond Loewy in his new "Idea Chairs" booklet says, "Tufflex upholstery padding is ideal for cushioning furniture with crisp sculptured lines. It maintains desired shapes and contours without compacting, shifting or breaking apart under pressure."

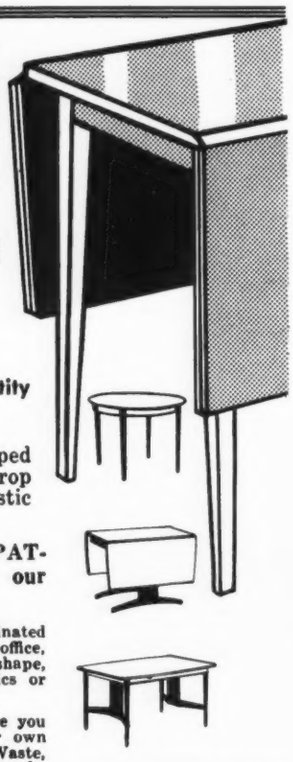
Write for new booklet and Furniture Designers Kit. Learn how you can gain customer appeal and added profits. Details for the chair arm advantages shown above also available in a new folder.

TUFFLEX® (all cellulose fiber) CUSHIONING *"with the natural springy fiber"*

WOOD CONVERSION COMPANY, DEPARTMENT 504-71, FIRST NATIONAL BANK BUILDING, ST. PAUL 1, MINNESOTA

FOR DATA CIRCLE FDM NO. 1969

laminated TOPS



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Any Size—Any Shape—Any Quantity
Any Pattern—Any Style

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Over 1000 BRAND NAME PATTERNS AVAILABLE. Put our versatility to work for you!

We specialize in manufacturing laminated table tops for institutional, professional, office, and household furniture regardless of shape, style, size or quantity in either plastics or wood veneers.

Our low, low operational costs enable you to reduce the operating costs of your own plant, and Eliminate: Culls, Storage, Waste, Rework, Working Space. The tops can be furnished rough—or—finished ready to mount.

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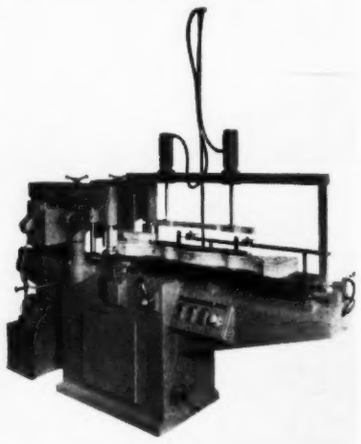
Complete
MIRROR
HARDWARE
Metal and Plastic
A reliable, dependable source for high quality Mirror Hardware at lowest prices.
Write for catalog and samples.
Bull Dog Lock Co.
4636 N. Ravenswood Ave.
Chicago 40, Ill.
Leaders in original ideas for over 20 years.

FOR DATA CIRCLE FDM NO. 1926

IT'S NEW/FROM PAGE 44

Machine Automatically Does Profiling and Shaping Work

An automatic profiling and shaping machine, a two-side, two-spindle unit designed to shape straight or irregular edges on one side or opposite sides of wood parts, was introduced by Ekstrom, Carlson & Co. The manufacturer reports that parts can be equally or unequally formed as they pass through the cutting cycle. Each head moves independently of the other, following the contour of its respective pattern. Parts that require shaping on one side only can be laid back-to-back or, parts can be stacked in multiples. The shaping machine is designed particularly for rectangular work pieces as upholstery frame parts, chair backs, chair legs, etc. Both feed and holding power are obtained through hydraulic and pneumatic pressure. Feed speed is infinitely variable fom zero to 80 ft. per minute.



For More Information Circle Reader Service Number 838

Laminate Made of Aluminum And Vinyl Plastic Film

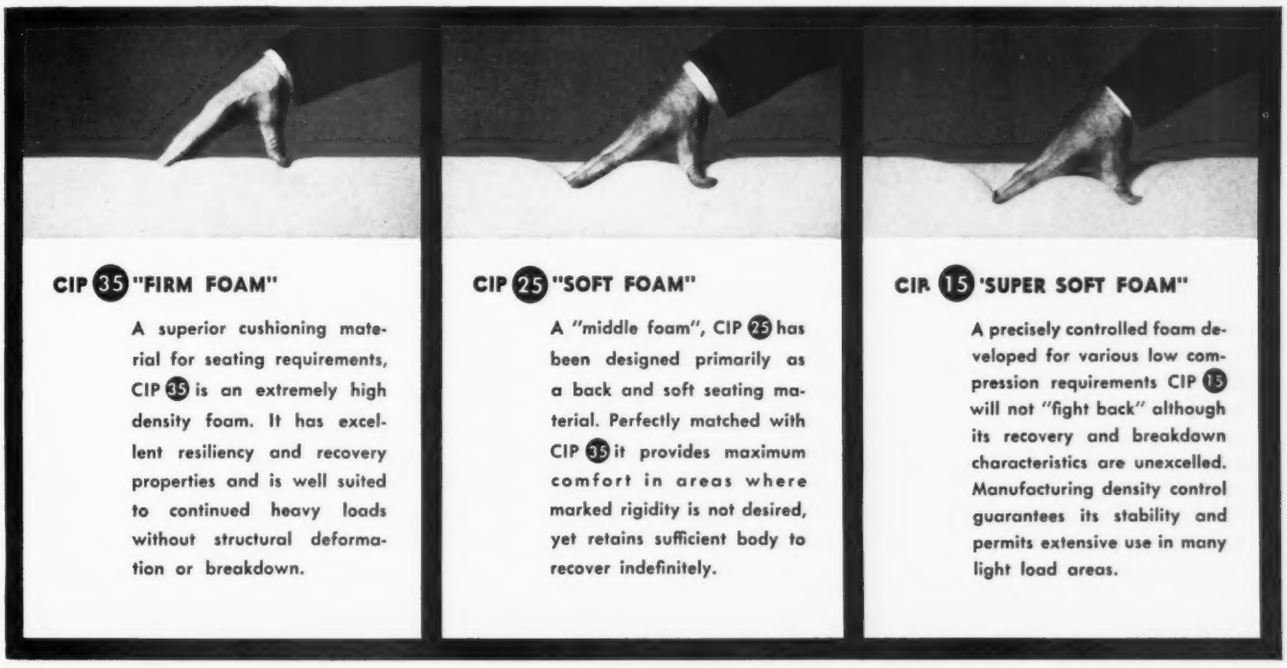
Alcoa Vynalate, a new laminate of aluminum sheet and vinyl plastic film, was announced by Aluminum Co. of America. Created specifically as a tool for designers and stylists, Vynalate is available in a broad range of coatings, embossed and printed with up to five colors. It is offered in 39 design-color combinations, with any commercially available vinyl plastic film, or with designs specially developed for the user. It is also available in wide coils and in linear-type patterns, such as striped effects. Manufacturer reports that in flat or coiled sheets, it lends itself to high-speed, volume production. The material is reported to be light weight, resists corrosion, has strength of aluminum with finish capabilities and abrasion and stain resistance of vinyl. It is produced in widths up to 48 in., with a metal thickness range from .015 to .051 in.

For More Information Circle Reader Service Number 839

TO PAGE 48

CIP* announces major foam advance for all furniture applications!

Now, for the first time a complete line of "controlled comfort" polyurethane foam is servicing the furniture industry. Four years of research has gone into its perfection. Special machinery and precisely controlled chemical ingredients guarantee batch-to-batch uniformity and absolutely controlled resiliency, compression, and density factors. Furniture Manufacturers reap the benefits. Now you can confidently select the particular grade best suited to each application. Three of the standard CIPFOAMS — 35 ; 25 ; 15 ; are illustrated below:



CIP 35 "FIRM FOAM"

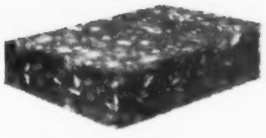
A superior cushioning material for seating requirements, CIP 35 is an extremely high density foam. It has excellent resiliency and recovery properties and is well suited to continued heavy loads without structural deformation or breakdown.

CIP 25 "SOFT FOAM"

A "middle foam", CIP 25 has been designed primarily as a back and soft seating material. Perfectly matched with CIP 35 it provides maximum comfort in areas where marked rigidity is not desired, yet retains sufficient body to recover indefinitely.

CIR 15 'SUPER SOFT FOAM"

A precisely controlled foam developed for various low compression requirements CIP 15 will not "fight back" although its recovery and breakdown characteristics are unexcelled. Manufacturing density control guarantees its stability and permits extensive use in many light load areas.



CIPBOND

CIPBOND is a homogenous base of specially shredded and colored Premium Polyurethane particles compactly bonded together.

No more unstable foams . . . no more varying compression ratios . . . no more "seconds", because all three CIP FOAMS are formulated with the same high quality ingredients (no scraps, no fillers, no rejects). All three CIP FOAMS are precisely controlled through compounding, manufacture and curing to insure absolute uniformity in accordance with Rubber Manufacturers Association Standards. All three CIP FOAM grades, regardless of density, have the same outstanding polyurethane advantages.

CIPFOAMS; CIP 35, CIP 25 and CIP 15 are now available in all sizes and custom shapes, with every piece bearing the exclusive color coded CIP certification grade number. Carolina Technical Assistance is immediately available to help you with all your cushioning problems.

Write for Bulletin 200 or call collect for more detailed information.

CIP-35 FIRM FOAM
CIP-25 SOFT FOAM
CIP-15 SUPER SOFT FOAM
CIPBOND

* Carolina Industrial Plastics
DIVISION ESSEX WIRE CORPORATION
Mt. Airy, North Carolina

FOR DATA CIRCLE FDM NO. 1929

KNOW OF ANOTHER PRODUCT BESIDES THAT KEEPS . . .

Roll-eez Trade Mark

Wooden Drawers Working Smoothly

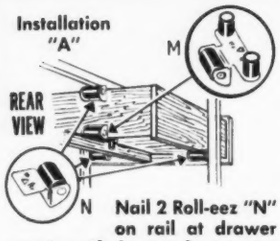
—yet is so VERY LOW in COST*

IT PAYS for ITSELF by ELIMINATING CLOSE TOLERANCE Drawer Fitting

?

There is no product on the market that surpasses Roll-eez in performance or matches them in cost-saving advantages. Easy to apply, they allow you to work to a wider range of tolerances and speed the fitting of drawers — factors generally found to offset their small cost. Designed to eliminate wood-to-wood contact and keep drawers in alignment, nine different styles — *improved* NYLON rollers — a variety of installations — provide smoother, quieter drawer action, add to appeal of your line.

Send for Complete Data & Sample.



Nail 2 Roll-eez "N" on rail at drawer opening. If drawer has center guides, nail a third Roll-eez "N" on top of back in middle, Roll-eez "M" on bottom of back straddling the guide.

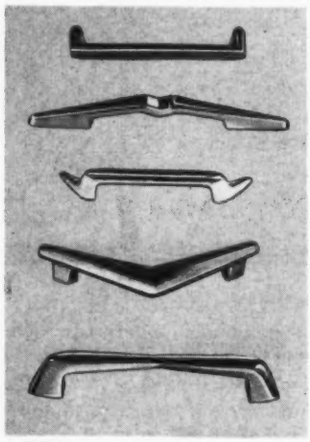
- Quick, Easy to Install
- Eliminate Close Tolerance Drawer Fitting
- Performance Compares with Expensive Slides

*One Roll-eez "A" Set in Bulk.

JUNIOR-PRO PRODUCTS CO. 118 E. Marceau St. • St. Louis 11, Mo.

FOR DATA CIRCLE FDM NO. 1944

DRAWER CAST METAL PULLS



TOP TO BOTTOM

- No. 8000 4¼" long 4" center holes
- No. 8023 6" long 4" center holes
- No. 8005 4½" long 3" center holes
- No. 8004 4½" long 3½" center holes
- No. 8001 4¾" long 4" center holes

Write for samples & prices

ALL AVAILABLE IN A WIDE VARIETY OF FINISHES. See our complete line of CAST METAL HARDWARE . . . items to customer specifications. All work done at our own plant.

★ STAR CASTING CORP. ★
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WOrth 4-3823

FOR DATA CIRCLE FDM NO. 1961

SQUARES & LUMBER

ROSEWOOD (Veneer Logs)

- Goncalo – Alves
- Brazilian Walnut (Imbuia)
- Mahogany (African & Philippine)
- Limba

Plywood for drawer bottoms and backs
1/8" Lauan
Parana

Hardboard cut to size

Write today to:

BRIMBLE BROTHERS LUMBER CO.
1904 First City Nat'l. Bank—Phone CA 4-6709
Houston 2, Texas

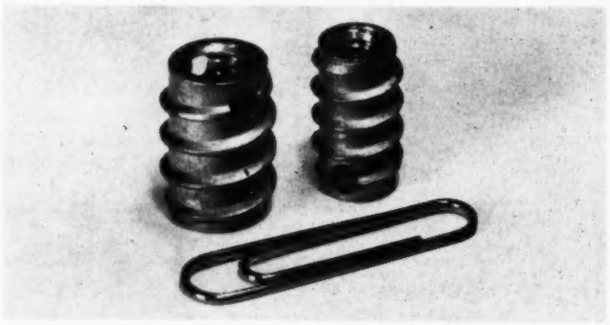
FOR DATA CIRCLE FDM NO. 1925

IT'S NEW/FROM PAGE 46

Compact High-Speed Grinder

A line of lightweight, high-speed air driven grinders which reduce production time, minimize operator fatigue and provide easy access to all areas of the workpiece was announced by Ingersoll-Rand Co. The grinders measure 16-⅝ in. to 18 in. long and weigh 6½ to 7¼ lbs. They have free speeds of 6000, 9000, 12,000 and 15,000 r.p.m. Grip or straight handles are available.

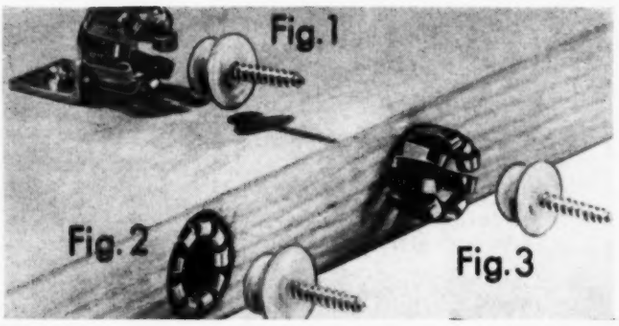
For More Information Circle Reader Service Number 840



Low Cost Wood Insert

A high strength, low cost wood insert has been developed by Groov-Pin Corp. Die cast of high strength Zamak, their low cost makes them ideal for use in woodworking applications where higher priced inserts could not be used economically, manufacturer reports. They can be used in blind holes and through holes and come in 1/4-20, 5/16-18 and 3/8-16.

For More Information Circle Reader Service Number 841



Nylon Button Latch

A button latch with nylon strike and adjustable pull strength of 3 to 14 lbs., requiring only two screws for installation, was announced by Wilco Products. Model B-10 (Fig. 1) may be installed on frame or shelf. No. 10 (Fig. 2) is installed on shelf face using 11/16 drill to a depth totaling ⅜ in. from clearance point of door, or, (Fig. 3) where at least ⅜ in. clearance is provided.

For More Information Circle Reader Service Number 842

TO PAGE 50

The final touch is a top by **FARLITE**

Try this for a sales winning combination . . . your new furniture line *plus* the advantage of a top by FARLITE. Our experienced design and production staffs will cooperate in selecting (or creating) the high pressure plastic laminate you need, determine the proper core type, then accurately machine and edge the tops on our high-speed specialized equipment. We would appreciate the opportunity to quote on your next top requirements!

FARLITE DIVISION / FARLEY & LOETSCHER MFG. CO. / DUBUQUE, IOWA

FOR DATA CIRCLE FDM NO. 1939

Write for **FREE** Sample Book
of our **CAMBRICS**
the only guaranteed sulphur fast black cambric on the market.

This fabric has been dyed by a special process *Sulphur*
FAST BLACK
the finest BLACK money can buy
FULLY GUARANTEED

COLOR FAST TO
- cleaning
- washing
- perspiration

PROOF AGAINST
- smudging
- bleeding
- cracking

Sold only through better converters everywhere

Product of **THE HARODITE FINISHING CO., INC.**
North Dighton, Mass. • VAndyke 4-6961

FOR DATA CIRCLE FDM NO. 1946

Brass Ferrules

HIGH STYLED & PRODUCTION
SWIVELS – FLARED – ETC.

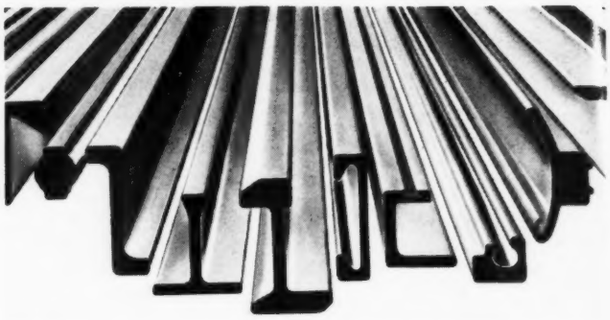
STEVEN PRODUCTS CO.
Division of Glomar Industries
184 Casper Street, Valley Stream L.I., N.Y.
•
Manufacturers of Furniture Ferrules

FOR DATA CIRCLE FDM NO. 1962

A COMPLETE LINE OF MODERN AND TRADITIONAL WEAVES

SAMPLES ON REQUEST } **Rainbow Trading Company, Inc.**
268 WATER STREET, NEW YORK 38 • COrtlandt 7-2939

FOR DATA CIRCLE FDM NO. 1954



Fiberglass Extruded Shapes

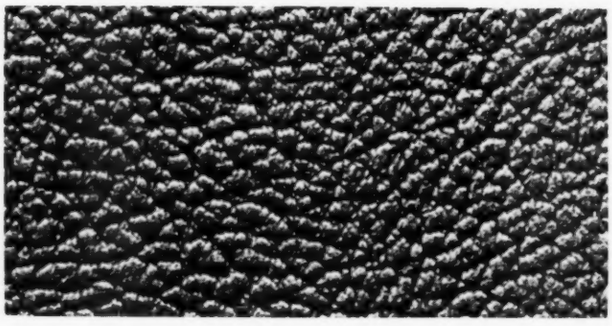
Low cost extruded profiles, with unidirectional or omnidirectional reinforcing fibers, in a wide selection of resins, fibers and fillers is offered by New Plastic Corp. The process will extrude intricate shapes in sizes ranging from 1/64 in. to approximately 6 in. diameter, in lengths limited only by shipping restrictions.

For More Information Circle Reader Service Number 843

Protective Waxed Bags

Special, large, flat-style Waxsorb paper bags have been developed by Thilmany Pulp and Paper Co. Made of wax impregnated protective papers, the bags provide a smooth but tough abrasion and scuff resistance for folding chair finishes during carton packing and while en route during shipping. The bags are easy to handle and require a minimum amount of room in a packing carton.

For More Information Circle Reader Service Number 844



New Decorative Hardboard

A decorative hardboard, called Moroccoboard, was introduced by Hardboard Fabricators Corp. The board has a subtle design with a look of leather and has a raised surface that will take lacquer, paint and rag painting. The tempered, durable, domestic hardboard is available in ⅛ in. and ¼ in. thickness.

For More Information Circle Reader Service Number 845

TO PAGE 52

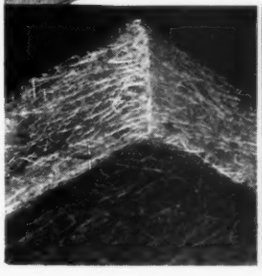
cut out all waste with

Burton-Dixie PACKAGED PADDING

. . . made exactly to your specifications

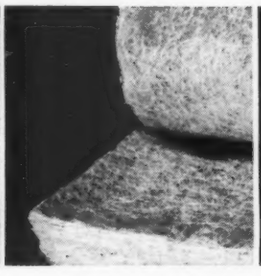
combines sewed padding securely stitched to a burlap skirt.

- **Eliminates two complete operations in your factory**
- **Cuts out all waste of insulator, padding and burlap because Burton-Dixie's sewed padding is made exactly to your specifications**
- **Speeds up your production and assures a uniform finished product**
- **Available in any size or shape**
- **Reduces your inventory to one item only instead of three**



SI-LATEX . . . a combination of interstitched sisal and pure latex, vulcanized together to make an extra strong spring insulator.

- **Laboratory proved to outwear ordinary spring insulators 2 to 1**
- **Eliminates all spring feel . . . cannot cup or hollow out**
- **Available cut to any size or shape . . . plain or stitched to cotton felt**



SISAL The finest quality you can buy . . . consisting of only the toughest, whitest sisal fibers available.

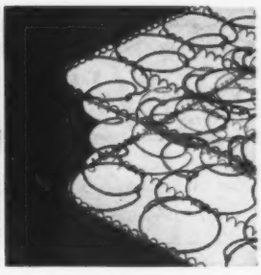
- **Cut to any size or shape**
- **Also available in rolls of any width**
- **Loose punch for a soft pad . . . or tight punch for a firmer pad**
- **Loom pad also available for a much firmer pad**

SEWED PADDING Spring insulator and fine quality cotton padding sewed together to save you labor and assure uniformity. For use on all spring constructions.

- **Si-Latex – Cotton. Burton-Dixie's exclusive Si-Latex insulator and cotton padding**
- **Sirex – Ordinary sisal insulator and cotton padding**

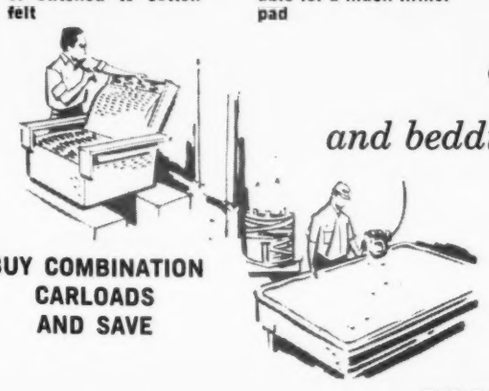
COTTON FELT The finest quality cotton only . . . consisting of high grade staple cotton and linters.

- **Made of 100% all new material**
- **Furnished to any thickness and widths**
- **Cut to any sizes or shapes**



MATTRESS INNERSPRINGS AND CUSHION SPRINGS The finest innerspring units made . . . available in standard and special sizes.

- **Accepted by nationally known bedding manufacturers for more than 60 years**
- **All standard coil counts available**
- **Any gauge wire you prefer**



BUY COMBINATION CARLOADS AND SAVE

one dependable source for your upholstering and bedding needs for over 60 years

Burton-Dixie Corp.

Chicago Plant and Executive Offices . . . 2024 South Racine

Manufacturing Plants in: Lansing • Dallas • Detroit • Denver
Kansas City • Blacksburg • Memphis • Atlanta

FOR DATA CIRCLE FDM NO. 1928

FIBRO-KANE WEBBING

- Has the attractive variegated appearance of natural cane.
- Is much lower in cost, permitting its use in many applications where natural cane has proved too expensive in the past.
- Is easy to apply and finish — can be stained to harmonize with various woods.
- Does not become brittle with age. No undesirable loose "hairs" or splinters.

Samples and full particulars on request.

E. W. TWITCHELL, INC.

3rd and SOMERSET STREETS
PHILADELPHIA 33, PA.

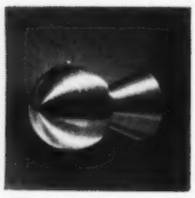
FOR DATA CIRCLE FDM NO. 1964

EPCO

KNOBS for Cabinet Doors and Drawers

- Machined from Aluminum or Brass Bar Stock
- Beautiful Jewel-like appearance
- Easy to install

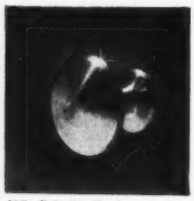
KP-50 Pull for cabinet doors in clear anodized aluminum or lacquered solid brass bar stock. Other finishes available.



KP-51 Pull for cabinet doors in anodized solid aluminum or lacquered solid brass bar stock. Other finishes are available.

These new pulls are carefully designed to give lifelong beauty and service. Each fulfills all the necessary requirements for easy operation, clean and handsome appearance, ease of installation and freedom from maintenance worries.

KP-55 Pull for cabinets and doors in anodized solid aluminum or lacquered solid brass bar stock. Other finishes available.



KP-56 Pull for cabinets and doors. In anodized solid aluminum or lacquered solid brass bar stock. Other finishes available.

SEE SWEET'S CATALOG
For the complete EPCO line under Architectural File No. 18g-En and Light Construction File No. 7a-En.

FREE 20-PAGE CATALOG
On the complete EPCO line of magnetic and friction catches, E-Z glide track and glides, and drawer pulls will be sent on request.

THE ENGINEERED PRODUCTS CO.
P.O. BOX 118 - FLINT, MICH. - PH. CEdar 9-8689

FOR DATA CIRCLE FDM NO. 1938

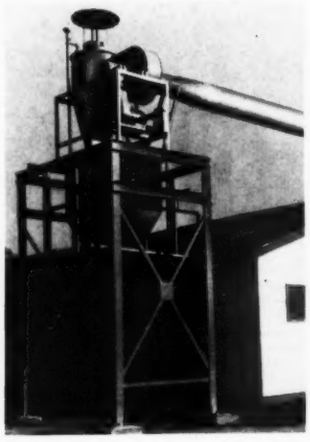
IT'S NEW/FROM PAGE 50

Lightweight Hydraulic Gun

An improved hydraulic gun capable of setting up to 1200 Pop rivets per hour and permitting operators 25 per cent more working radius than previous models, was announced by the Shelton Div. of United Shoe Machinery Corp. The tool is furnished with an air-to-hydraulic converter and operates from 75 psi air pressure. Manufacturer states it is especially suitable for production line work, combining high speed with portability.

For More Information Circle Reader Service Number 846

Dust Collection Units



A standard line of universal hoppers and stands for Dustkop dust collection units is offered by Aget Mfg. Co. Three sizes of hoppers and two sizes of stands are available. Any series Dustkop, when ordered without its standard bin, will fit any of the hoppers and stands. Designed for maximum convenience in plant operation, the HS-12 stand provides truck clearance beneath hoppers; HS-10 has adequate clearance for tote truck or wheelbarrow.

For More Information Circle Reader Service Number 847

Open Shelf Power File

An open shelf power file, bringing speed to filing and finding as well as saving space, is offered by Diebold, Inc. Designed to handle documents of any practical size, the files are available in three standard models with 12, 14 and 16 shelves. All shelves rotate in upright position. The unit is designed to solve bulk filing problems and comes in either letter or legal size shelf-depths.

For More Information Circle Reader Service Number 848

TO PAGE 54

V-101 Slender 6" to 16"
V-102 Early American 6" to 14"
V-103 Flair 6" to 16"
V-104 Octagonal 6" to 14"
V-105 Danish 4" to 12"
V-106 Thrift 4" to 12"
V-107 Lawson 3" to 4"

THE TOP "7" by Victor

UNMATCHED FOR QUALITY AND STYLE AT PRODUCTION PRICES

Here are the top "7" basic designs that will cover most of your furniture needs. Each one of the finest quality and original styling at low production prices!

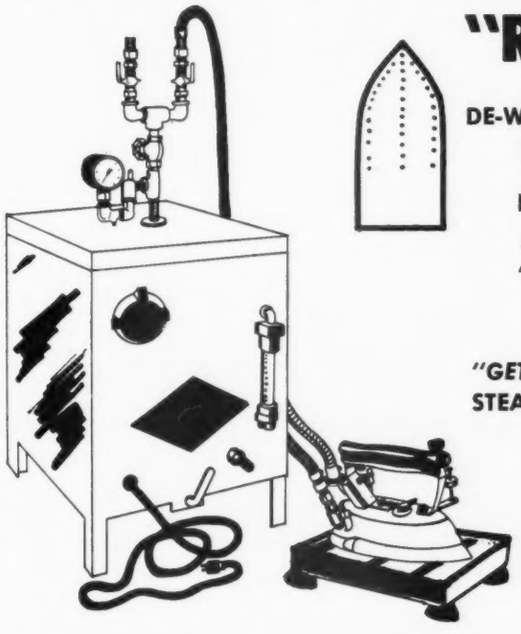
Only Victor offers you such a complete range of sizes and beautiful finishes. Write today for prices and samples by style number.

Victor WOOD PRODUCTS CO. 1514 Wealthy St., S. E., Grand Rapids 6, Michigan
Phone GL 4-8224
"We lead, others follow"

FOR DATA CIRCLE FDM NO. 1965

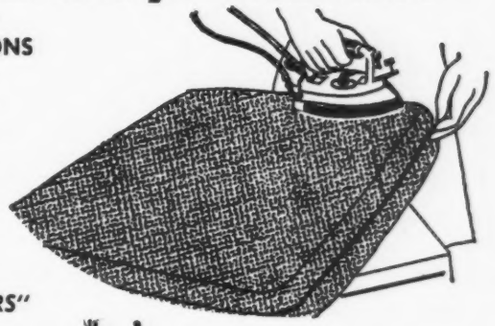
THE NEWEST—UPHOLSTERY FINISHING

"Reimers Beauty Treatment"

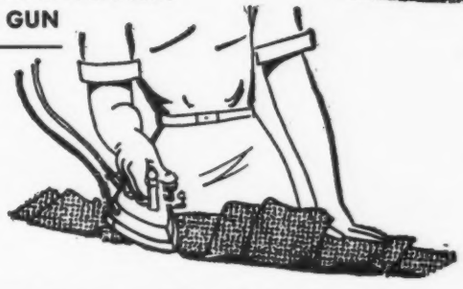


DE-WRINKLES CUSHIONS
NO RE-SEWING

PERFECT SKIRTS
ARE EASY FOR
"HEAVY DUTY"
STEAM IRON



"GETS INTO CORNERS"
STEAM GUN



USE THE IRON,
THE GUN,
OR BOTH,
TO SMOOTH
PUCKERS,
WRINKLES.

PORTABLE ELECTRIC STEAM GENERATOR.
STEAM IN TEN MINUTES—ALL AUTOMATIC.
CONNECT TO WATER AND ELECTRIC.
NO EXPENSIVE PLUMBING.

Reimers Electric Appliance Co., Inc.
Clearbrook, Va. Dept. "B"
Write for INFORMATION

FOR DATA CIRCLE FDM NO. 1955

ARNOLT FRAMES

Manufactured from Arnolt X-L-O furniture tubing, beautifully designed and finished to specifications of leading manufacturers of dinette furniture.

LEADERSHIP IN STYLING AND QUALITY

Progressive On display during the market in the Arnolt space 3050—Furniture Mart

Many dinette manufacturers who have specified and used Arnolt Frames for years know they can depend on the prompt delivery of highest quality frames ready for trouble-free assembly. Through exact determination of costs, their products reach the market competitively-priced. Distinctive Arnolt styling consistently enhances the marketability of finished product . . . assures top consumer acceptance!

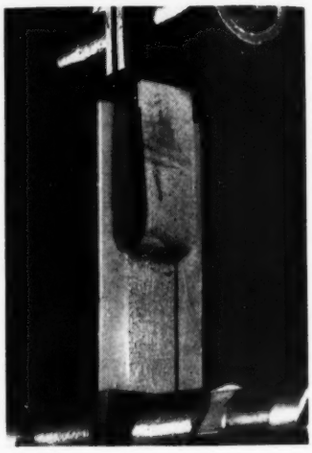
ARNOLT CORPORATION
Warsaw, Indiana, U.S.A.

FOR DATA CIRCLE FDM NO. 1920

IT'S NEW/FROM PAGE 52

General Purpose Adhesive

A general purpose neoprene contact cement, D-239, for bonding a wide variety of materials, has been developed by Armstrong Cork Co. It gives bonds that have high peel strength, remain permanently strong and resilient and have good water resistance, the firm reports. It will bond supported vinyl fabrics and fabric backed urethane sheets to metal, wood and composition bases, and thin gauge metals or foils to wood, cement asbestos board, hard board and composition bases.



For More Information Circle Reader Service Number 849

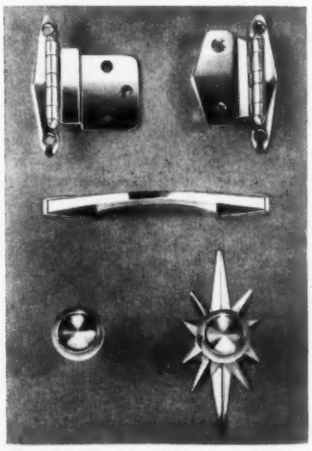
Compact Brad Gun

A Model B-6032 junior brad gun, which will drive brads flush or countersink them 1/16 in., is available from Fastener Corp. The tool operates with either conventional trigger or by a touch-trip mechanism. It is air operated and can be powered by a small portable compressor or plant compressed air system. It holds 100 brads, loaded via a rear end staple chute. It will drive brads 5/8, 3/4, 7/8 and one inch long. Easy adjustment of driver blade provides automatic counter-sinking.

For More Information Circle Reader Service Number 850

Catalina Hardware

A new, semiconcealed hinge to match its Catalina pull is offered by Amerock Corp. The hinge is available in 3/8 in. and 1/2 in. inset, in polished brass, dull bronze, satin copper and polished chromium. Completing the Catalina line is a surface hinge, in either flush or 3/8 in. offset type, a knob, and backplate.



For More Information Circle Reader Service Number 851

New Sheeting For Vinyl To Metal Applications

A quality vinyl sheeting for more highly styled and decorative vinyl-to-metal applications, Boltaflex 500, has been developed by General Tire & Rubber Co. The firm reports a new process of compounding and blending materials makes the vinyl exceptionally adaptable to all current metal fabrication. It is available in thicknesses from .101 in. to .020 in., in a wide range of widths.

For More Information Circle Reader Service Number 852

Low-Cost, Decorative Pressure Sensitive Material

A low-cost, decorative pressure-sensitive material which simulates leather and other decorative trims, available in a variety of colors, styles and embossing patterns, is offered by Avery Label Co. Manufactured from Pyroxylin-coated paper, it is reported to be attractive, easy to work with, has minimum shrinkage, and adheres to most surfaces with simple finger-tip pressure, requiring no moistening or activation.

For More Information Circle Reader Service Number 853

NEW LITERATURE

PORTABLE AIR-POWERED AND ELECTRIC TOOLS are contained in a 72-page catalog issued by Buckeye Tools Corp. The Catalog No. 61 includes sections on drilling, fastening, abrasive, special tools as saws and routers, electric tools and accessories.

For More Information Circle Reader Service Number 854

VALCORE INFLATED FINISHING WHEELS, utilizing a new development in the use of crowned abrasive material, is described in a bulletin from Nu-Matic Grinders Inc.

For More Information Circle Reader Service Number 855

HYDRAULIC PRESSES, designed for bonding of plywood, particle board, decorative laminates, hard boards and reconstituted wood products, are covered in a bulletin released by G. M. Diehl Machine Works, Inc.

For More Information Circle Reader Service Number 856

WOODWORKING ADHESIVES are described in Catalog A-200 from Armour Alliance Industries. Included are characteristics and properties of 13 resin base adhesives and animal glues, and specific applications and advantages.

For More Information Circle Reader Service Number 857

OVER 100 POWER TOOLS are contained in a new 68-page catalog from Skil Corp. More than 200 illustrations, information on product features and applications and complete specifications are included.

For More Information Circle Reader Service Number 858

NATIONAL STANDARD ABRASIVE BELTS, rolls, sheets and discs are listed in a catalog issued by the Coated Abrasives Div. of The Carborundum Co. All items listed are maintained in stock at the firm's warehouses by electronic order processing and inventory control to help customers cut costs and expedite service.

For More Information Circle Reader Service Number 859

PORTABLE SHOP FINISHING KIT

Everything Handy for Service Calls, Store and Shop Work

Contains ALL material you need to repair ALL furniture finishes

Contents:
48 Burn-In Sticks
50 Blendal Stains
Electric Knife
Abrasive Paper
Sable Brush
All Chemicals

Write Dept. FDM

ORDER NOW

MOHAWK FURNITURE FINISHING PRODUCTS

175 W. Main St. Amsterdam, N. Y. | 88-05 101st Ave. Ozone Park, N.Y.C., N.Y. | 3809 Burbank Blvd. Burbank, Calif.

FOR DATA CIRCLE FDM NO. 1950

Excellent
FURNITURE MFG. PLANTS
now available in
EASTERN PENNA.

25,000 sq. ft.
16,000 sq. ft.
12,000 sq. ft.
Modern one story space. Tailgate truck loading. Rail facilities. Good labor.

BINSWANGER
1420 Walnut St., Phila. 2, Pa. • PE 5-0202

FOR DATA CIRCLE FDM NO. 1923

For Safety Sake
KNOUREK SCHMIDT COMBINATION COLLARS
Ball Bearing & Lock Edge

Original Knourek Ball Bearing Shaper Collar. Furnished with solid grooved collars or Schmidt Safety Collars. Cut shows ball bearing collar with safety collar for notched shaper steel. All sizes in stock for immediate shipment.

WOODWORKERS' TOOL WORKS
224 S. Jefferson Street
Chicago 6, Illinois

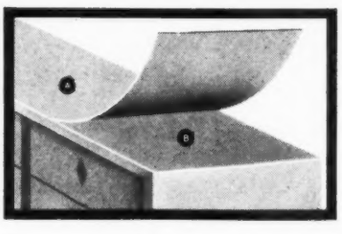
FOR DATA CIRCLE FDM NO. 1971

Duraflake

SMOOTH

Contempera Grain by B. P. John Furniture Corp.

The big difference in Duraflake is the surface smoothness ■ This is the best board yet for core stock ■ Duraflake is dimensionally stable, exact in thickness, available cut to size and is unsurpassed for machinability and screw holding ■ Leading furniture and woodworking manufacturers use Duraflake to meet their most exacting requirements . . . requires no cross-banding ■ Write for information and specific application ■



FLAWLESS SURFACES BEGIN WITH DURAFLAKE
Fine furniture is smoother here (A) because Duraflake is smoother here (B) it will pay you to try this smoother wood formed board. Available up to 60" x 192" in 3/8" to 1-3/16" thickness.

Duraflake by Wood Fibreboard Company

P. O. BOX 245, ALBANY, OREGON • TELEPHONE WABASH 8-3341 • TWX ALBY 696

FOR DATA CIRCLE FDM NO. 1970

FDM FURNITURE ENGINEERING

A technical section for managers, department heads and technicians

To help you find a better way to utilize materials, labor, plant and equipment, we begin here a new, practical, authoritative series devoted to reducing production costs.

Column by

RUDOLPH WILLARD

Visiting Professor, Dept. of Industrial Engineering, Furniture Manufacturing & Management, North Carolina State College

COST REDUCTION & CONTROL

Cost Reduction—Whose Job Is It?

One of the generally recognized responsibilities of management is the reduction of costs. But it is also generally recognized that management's function is to direct. A manager gets paid not so much for what he does as for what he gets done. This implies that people other than the manager perform most of the "doing". TO PAGE 58

How Product Mix Affects Profits
Page 60

Four Surfaces Sanded In One Pass
Page 62

Report on New Particle Board Operation
Page 65

NEXT MONTH:

Lumber Waste: Construction for Minimum Lumber Requirements

NEW YATES-AMERICAN *Automatic*

SHUTTLE LOADING PRESSES

BACK-TO-THE-WALL INSTALLATION conserves valuable floor space. The entire operation is front only—the same job done in half the space!

AN AUTOMATIC-LABOR SAVING PRESS—Exclusive auto-shuttle design allows one man lay-up during actual press cycle—no lost time—the machine sets the pace you determine.

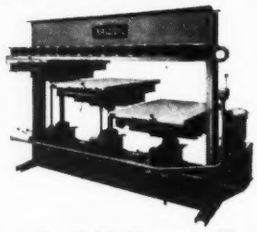
OPTIONAL PLATEN HEATING—Use hot or cold—heat electrically or with steam or hot water. This versatile press adapts itself well to any installation or operational requirement.

LOW INVESTMENT—HIGH PRODUCTION—Built to highest Yates specifications utilizing up-to-date features.

MODEL NO. SPA-200

WRITE FOR COMPLETE SPECIFICATIONS AND PRICE INFORMATION ON YATES-AMERICAN PRESSES—TELL US YOUR REQUIREMENTS.

Hydraulic Hot Plate Press Model MRL-100 with four platens heated by electricity, steam or hot water, fully automatic operating cycle, and 8′ x 4′ capacity.



Hydraulic Cold Presses, Type HH, are available in 2-, 3-, and 4-section models in various sizes, capacities.

SPECIALTY PRODUCTS DIVISION

YATES-AMERICAN

741 4th STREET, BELOIT, WISCONSIN

FOR DATA CIRCLE FDM NO. 1972

FROM PAGE 57

A large part of the doing is required, not for improving performance, but simply to keep things going. This is generally the primary job of the line organization, the superintendent and his foremen. It also requires most of the time and effort of people in such staff departments as purchasing and inventory control, production planning and control, personnel and safety.

It should be emphasized that cost control is not quite the same thing as cost reduction. Control implies holding on to what has already been gained; reduction implies doing better than has been done. Both are important. Many times cost reductions have been accomplished but, due to lack of control, costs have gone back up to former levels within a few weeks or months. Many other times, due to good control, costs have held steady but have not gone down because of lack of effective work on cost reduction. The ideal situation is a continuous program of cost reduction backed up by effective cost control so that the gains which are accomplished by cost reduction are made permanent through cost control.

Cost control is generally a part of day to day operating routine and much of it is done by the line organization. Cost reduction is generally different. To be most effective, there should be one or more people in the organization who have no other duties than to work on cost reduction. They need not originate all the cost reducing ideas. Frequently the foremen and superintendent think of ideas for cost reduction such as new manufacturing methods, new equipment, new specifications for materials, new procedures for reducing non-productive time. But new ideas for cost reduction are not all good ideas, neither are they all technically sound. Even if technically sound they may not be economically sound.

In order to separate the good ideas from the bad ones it is necessary for someone to take time to do some investigation and analysis. After analysis, if the idea looks promising, it is often desirable to try out the idea in a small way such as making a pilot run. But this time on a trial run is apt to be wasted unless some one person can stay right with it and keep

FOR MORE INFORMATION

ON

EDITORIAL—IT'S NEW—ADVERTISED PRODUCTS,

Circle the numbers of the appropriate item or advertisement, tear out and mail this postage free card.

FDM—Reader Service Dept.

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the necessary records so as to compare the new procedure with the old in a specific and quantitative way. From this comparison it is possible to get specific money figures for savings so that economic advantage can be accurately judged. This is where the full time cost reduction man comes in. He is the ideal person to conduct the checking, recording and comparing. A line supervisor cannot concentrate on one thing like this for any length of time. He is constantly beset by situations demanding his attention and decision just to keep the shop running smoothly. This is the major part of his job; if he concentrates on one thing for long, the overall department operation suffers.

While the full time cost reduction man need not originate all the ideas, they should all clear through him for study and analysis. Actually he need not originate any of the ideas but he almost surely will originate many. Whereas the line supervisor should have as his basic outlook "Let's get on with the job", the cost reduction outlook should be "There must be a better way to do it". If the cost reduction man has this outlook, so much the better. But he should have no narrow pride which causes him to push his own ideas harder than anybody else's ideas. The objective should be maximum improvement and improvement should be measured in money. If he is fair and open minded toward other people's ideas as well as his own, improvement will come faster and bigger, especially if he openly gives credit for the idea to the man who brought it to his attention.

Many factories feel they cannot afford a full time cost reduction man because their business is not large enough. But in most cases the reverse is true; they cannot afford to be without one. A furniture factory with as few as 100 employees will probably produce a million dollars a year or more. Even as little as 1 per cent saving would be $10,000 per year.

If a man were intelligent and conscientious, if he could get cooperation from people, and if he had nothing on his mind except cost reduction, it is hardly conceivable that he could work a year without accomplishing more than 1 per cent saving. Some cases frequently run five times this much and more. An exception would be where the business is more or less

TO PAGE 71

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Chapter Four in a book-length feature

COST FINDING WITH MACHINE HOUR RATES

How Product Mix Affects Profits

By Spencer A. Tucker

Product costing usually fails in the area of overhead expense allocation. No other costing inequity stands out so dramatically.

Managements work hard improving internal methods, but if the gains from this activity to be offered in the marketplace are not accurately reflected on the estimating sheet, the effort becomes academic. Considering the cost of making these improvements, they may even produce an increase in costs.

Management unfortunately tends to view cost-finding or cost-estimating only as *paperwork*—a somehow needed evil. And yet, with just a little more effort, and in some cases not as much as is presently used to develop cost estimates, managements can have an excellent system for profit-planning.

Expense Recovery:

When converter-manufacturers buy a piece of processing equipment they do so in the hope that it will make profits for them. However, before profits can be made, the cost of owning, operating, and maintaining this equipment must be paid for. This is what is meant by *expense recovery*. In costing and pricing its products, the company must first recover the money it advanced for the use and ownership of its equipment. If the equipment is used to its maximum capacity and this usage is costed equitably and priced properly, profits will result. If the equipment is kept idle, then the difference between the money it recovered in its sales of products passing through this equipment and the break-even money required to operate the equipment will be a loss, i.e., a charge against future profits.

Unfortunately, what keeps a facility idle is not always the state of general business conditions. Very often it is due to the poor cost-estimating system used which overprices products made on the facility, thus discouraging sales of products involving the facility. It is also often due to the particular mix sold which the sales department might have autonomously decided was easy to sell without considering the production department's need for expense recovery on expensive equipment.

Planned profits are the result of selecting a product mix which supports the needs of expense recovery in production. A proper product mix will provide a balanced condition of machinery usage which can then be reflected in the selling prices, as well as possibly considering the state of the market during the period, to yield optimum profits.

Cost-Profit Averaging:

Sometimes manufacturers inadvertently lose revenue on a large amount of their production and gain revenue on a small part because of the cost-estimating system in use. For example, in the corrugated container industry, some plants still cost out orders on the basis of square feet of board in the total container order. This assumes that the labor and overhead will be the same per square foot regardless of the type of container or the operations performed on it. But this is not the case. It is only so for one type of board passing through the corrugator. But once it leaves that facility it may be sold as sheets, or converted into containers which vary widely in lengths and widths and which may incorporate printing or include inserts, etc., making the actual square foot cost for labor and over-

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head vary from one to 20 times the basic cost. If the product mix of that plant gradually shifted to more expensive containers, the company would find itself losing more and more profits. The usual practice is to raise the square footage charge, but then this in turn overprices the less expensive containers which might constitute a large portion of the sales income.

And what happens to the expensive facilities? Their overhead expenses are put in a pool together with the lower overhead costs of the inexpensive facilities and averaged down. The costs so developed then are not adequate to return in the selling prices a high enough recovery to compensate for the use and ownership of the expensive facilities.

An analysis in a factory manufacturing races for ball bearings, the installation of machine-hour rates showed these operational variances in the relationships of the overhead percentages to direct labor: Cut-off 430 per cent, Stamp 560 per cent, Harden 310 per cent, End Grind 710 per cent, Cork 190 per cent. And yet until MHR was installed, they were using one flat percentage for the overall operation. No wonder they were losing money, even though their sales remained fairly stable. The clue was their product line: part of it was very popular and always backlogged with orders, the other part of it was extremely sluggish. Invariably the slow moving items involved the company's most expensive equipment and the losses caused by the lack of fixed-expense recovery at these centers were sufficient to put them in the red.

The Goal of Cost-Estimating:

A proper estimating system should state in advance the probable cost of an article in production. In effect, a group of estimates, representative of the major components of product mix of a company, comprises a condensed profit-and-loss statement.

If an estimating procedure is sound

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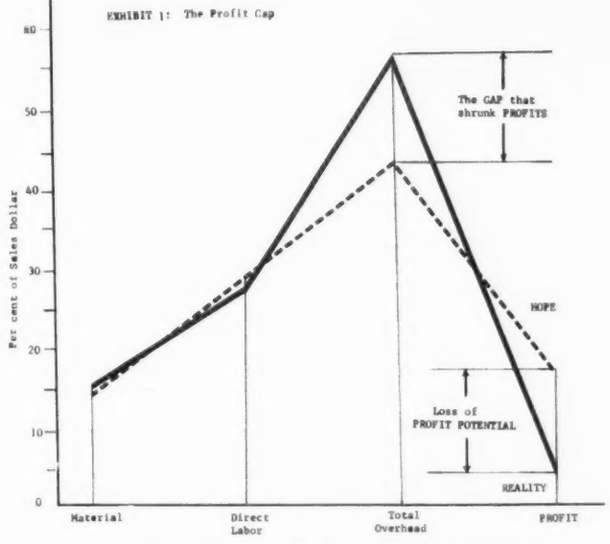
EXHIBIT 1: The Profit Gap



The uncharged-for overhead (by improper allocation) was taken out of profits and amounted to: $.135 x $2,750,000 -- $371,250. (Net reduction in profits: $.126 x $2,750,000 -- $346,500).

EXHIBIT 2: ARE YOUR ESTIMATES RECOVERING YOUR EXPENSES?

I: CONVERT YOUR 1960 MAJOR PRODUCT MIX INTO A COMPOSITE PRODUCT ESTIMATE

	Part A	Part B	Part C	Part D	Part E	Weighted Composite Estimate	Per Cent of Compositized S. P.
Direct Labor	$5.20	$3.00	$ .86	$ .21	$ .06	$ .791	28.2%
Total Overhead @ 150% of Direct Labor (From 1959 P & L)	7.80	4.50	1.29	.315	.09	1.187	42.3%
Material	.41	1.66	1.26	.015	.01	.385	13.7%
ESTIMATED Total Cost	13.41	9.16	3.41	.540	.16	2.363	84.2%
ESTIMATED % Profit	15%	20%	10%	15%	10%		
ESTIMATED Profit	2.366	2.29	.379	.095	.016	.446	15.8%
SELLING PRICE	$15.776	$11.45	$3.789	$.635	$ .178	$2.809	100.0%
PRODUCT MIX	5%	10%	15%	40%	30%		

II: CONDENSE YOUR 1960 PROFIT & LOSS STATEMENT

SALES		$2,750,000 -	100%
Direct Labor	$742,500	-	27%
Total Overhead	1,534,500	-	55.8%
Material	385,000	-	14%
PROFIT		88,000 -	3.2%

III: COMPARE "HOPE" WITH "REALITY"

	COSTS ESTIMATED	COSTS ACTUAL	Per Dollar of Sales GAIN	Per Dollar of Sales (LOSS)
Direct Labor	28.2%	27.0%	$.012	
Total Overhead	42.3%	55.8%		($.135)
Material	13.7%	14.0%		(.003)
PROFIT	15.8%	3.2%		NET ($.126)
Overhead as a % of Direct Labor (for academic interest only)	150%	207%		

EXHIBIT 3: HOW PRODUCT MIX AFFECTS PROFITS

I ESTIMATES	PART A	PART B	PART C	
Direct Labor	$.06	$.60	$2.40	
Material	.05	1.05	.90	
Total Overhead @ 150% (taken from historical data)	.09	.90	3.60	
ESTIMATED TOTAL COST	.20	2.55	6.90	
" Profit @ 10%	.02	.28	.77	
ACTUAL SELLING PRICE	$.22	$2.83	$7.67	
TOTAL SALES				$1,000,000
"Hoped-for" PROFIT				100,000

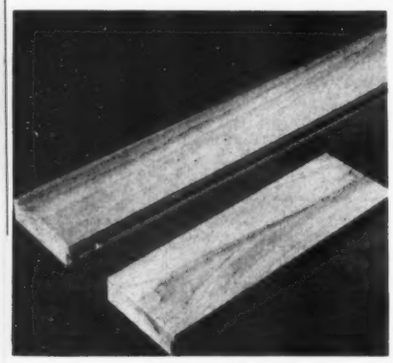
II REALITY: CONDITION A				
Assumed product mix:	30%	10%	60%	
Quantity sold:	1,363,636	35,335	78,226	
Direct Labor	.06	.60	2.40	
Material	.05	1.05	.90	
Actual Total Overhead	.14	1.20	3.16	
ACTUAL TOTAL COST	.25	2.85	6.46	
From I : ACTUAL S. P.	.22	2.83	7.67	
ACTUAL PROFIT OR (LOSS)	(.03)	(.02)	1.21	
SALES	$300,000	$100,000	$600,000	$1,000,000
"Hoped-for" PROFIT	30,000	10,000	60,000	100,000
ACTUAL PROFIT OR (LOSS)	(40,909)	(707)	94,653	53,037
		NEGATIVE Estimating Gap		$46,963

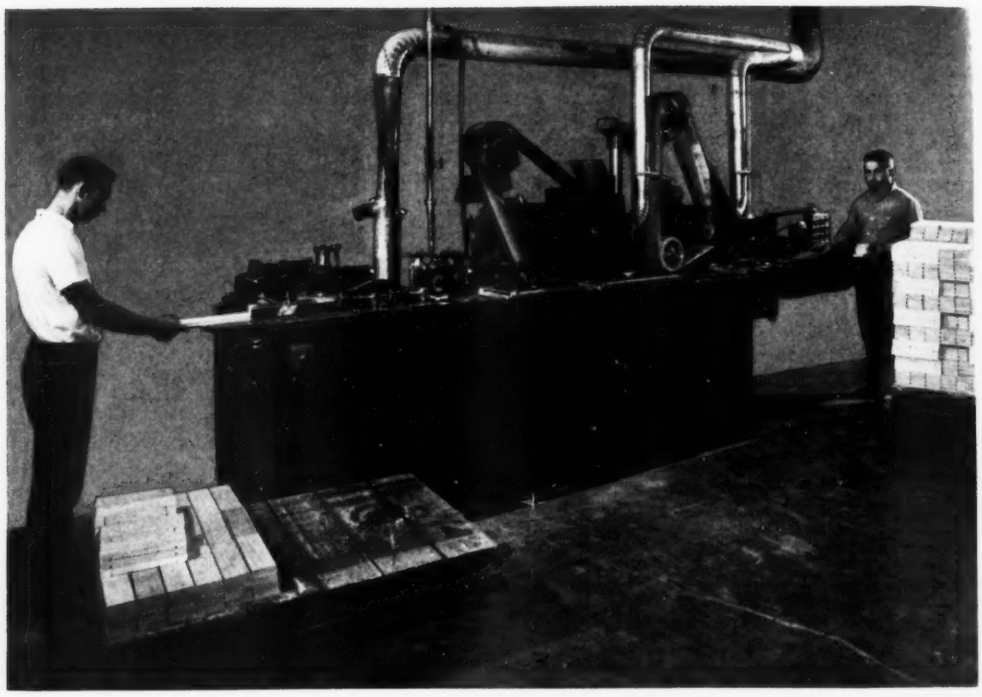
III REALITY: CONDITION B				
Assumed product mix:	70%	20%	10%	
Quantity sold:	3,181,818	70,671	13,037	
Direct Labor	.06	.60	2.40	
Material	.05	1.05	.90	
Actual Total Overhead	.07	.60	10.70	
ACTUAL TOTAL COST	.18	2.25	14.00	
From I: ACTUAL S. P.	.22	2.83	7.67	
ACTUAL PROFIT OR (LOSS)	.04	.58	(6.33)	
SALES	$700,000	$200,000	$100,000	$1,000,000
"Hoped-for" PROFIT	70,000	20,000	10,000	100,000
ACTUAL PROFIT OR (LOSS)	127,273	40,989	(82,524)	85,738
		NEGATIVE Estimating Gap		$14,262

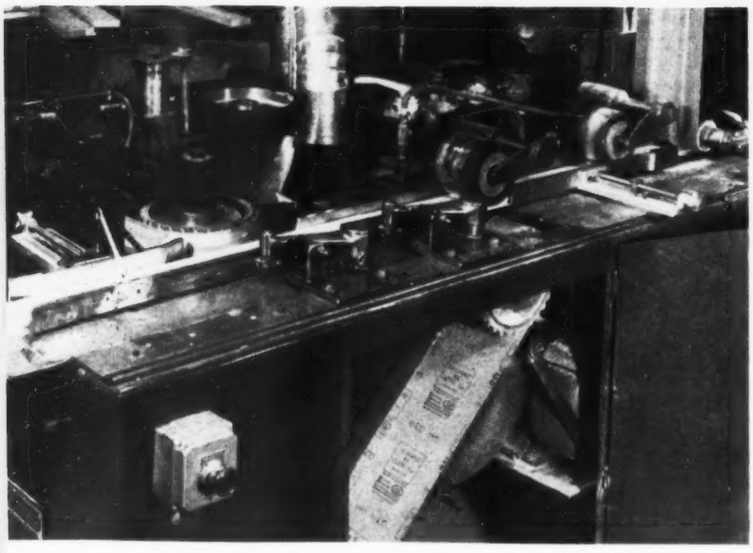
IV: REALITY: CONDITION C	PART A	PART B	PART C	
Assumed product mix:	85%	10%	5%	
Quantity sold:	3,863,636	35,335	6,519	
Direct Labor	.06	.60	2.40	
Material	.05	1.05	.90	
Actual Total Overhead	.055	1.20	14.20	
ACTUAL TOTAL COST	.165	2.85	17.50	
From I: ACTUAL S.P.	.22	2.83	7.67	
ACTUAL PROFIT OR (LOSS)	.055	(.02)	(9.83)	
SALES	$850,000	$100,000	$50,000	$1,000,000
"Hoped-for" PROFIT	85,000	10,000	5,000	100,000
ACTUAL PROFIT OR (LOSS)	212,500	(707)	(64,082)	147,711
		POSITIVE Estimating Gap		$47,711

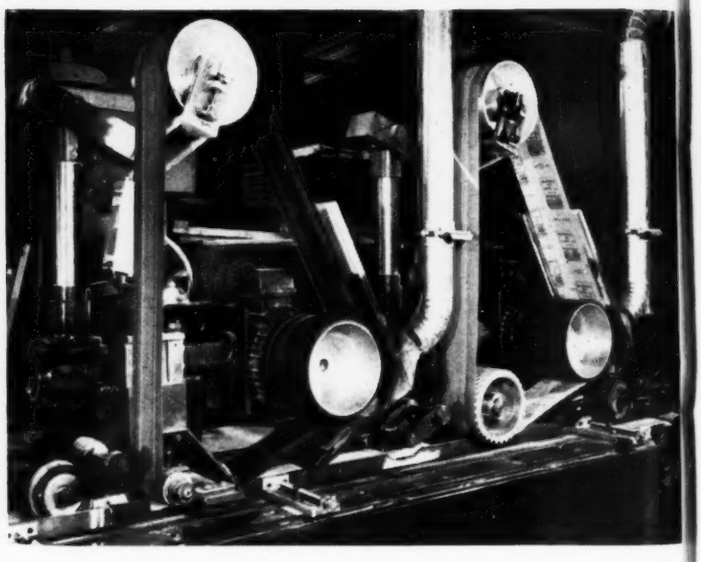
SUMMARY

THE GAP	PROFITS ESTIMATED	PROFITS ACTUAL CONDITION A	PROFITS ACTUAL CONDITION B	PROFITS ACTUAL CONDITION C
	$100,000	$53,037		
Estimating Loss		-$46,963		
	$100,000		$85,738	
Estimating Loss			-$14,262	
	$100,000			$147,711
Estimating Gain				+$47,711









SANDING AND POLISHING sticker machine, invented by J. N. Clyne can perform up to four separate sanding operations. Above, it is seen at the Manual Arts Furniture Co., producing piano bench rails. Upper left, finished rail stock is shown.

Four Surfaces Sanded in One Pass

A unique sanding machine using coated abrasive belts has eliminated four separate steps in producing rails for piano and organ benches at the Manual Arts Furniture Co., Cincinnati, Ohio.

Hubert Shearin, president of Manual Arts, sees the machine as the forerunner of a series of machines that will bring automation to the furniture manufacturing industry.

The sanding and polishing sticker machine was invented by J. N. Clyne of Culver, Ind. It is being produced by the Abrasive Machinery Division of Mitchum & Schaefer, Inc., Indianapolis, Ind.

At Manual Arts Furniture, the sanding and polishing sticker machine has replaced three drum sanding operations, a stroke sander and a hand block sander.

One pass through the new machine produces a bench rail rough sanded on two faces and rough sanded and polished on the third. Previously, it was necessary to sand each face separately on a drum sander. Then the long rails were polished on a stroke sander and the short (side) rails on a hand block sander.

Clyne said the machine also could sand the fourth face of the rails. That is unnecessary in the Cincinnati operation.

TO PAGE 69

New Binks Dispo Spray Booth has...

2250 sq. ft. of disposable "filters"

automatic curtain rolls away paint overspray

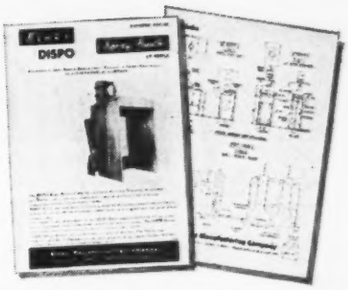
The secret of the new Binks Dispo Spray Booth is a 150-yard disposable curtain which collects paint overspray . . . approximately 150 gallons...that's 2250 sq. ft. of filtering!

It's economical . . . a roll costs less than 2 cents per square foot...about 80% less than most paint filters cost.

It's safe...manufactured to meet NFPA fire standards...accepted by all major insuring companies.

It's automatic . . . when the curtain collects a pre-determined amount of overspray, a new section advances automatically.

It's simple...one man can change a roll in 5 minutes.



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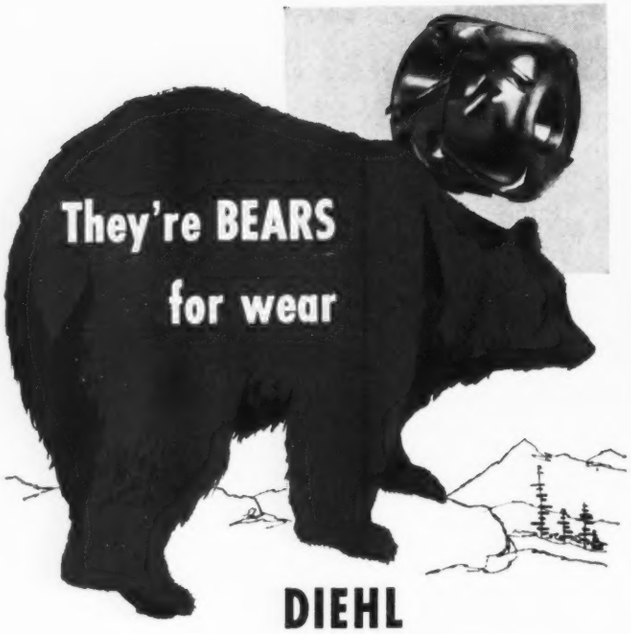

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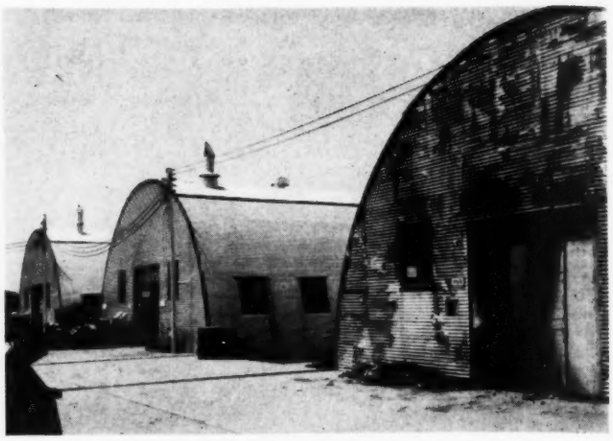


FIRE DAMAGED Fastener Corp.'s Building No. Six in Franklin Park, Ill., leaving the adjoining two buildings untouched.

Restore Fire Damage At Fastener Corp. Plant

An immediate, all-out program to restore full production of Duo-Fast staplers, tackers and staples is underway at the Fastener Corp., Franklin Park, Ill., after a fire on June 13.

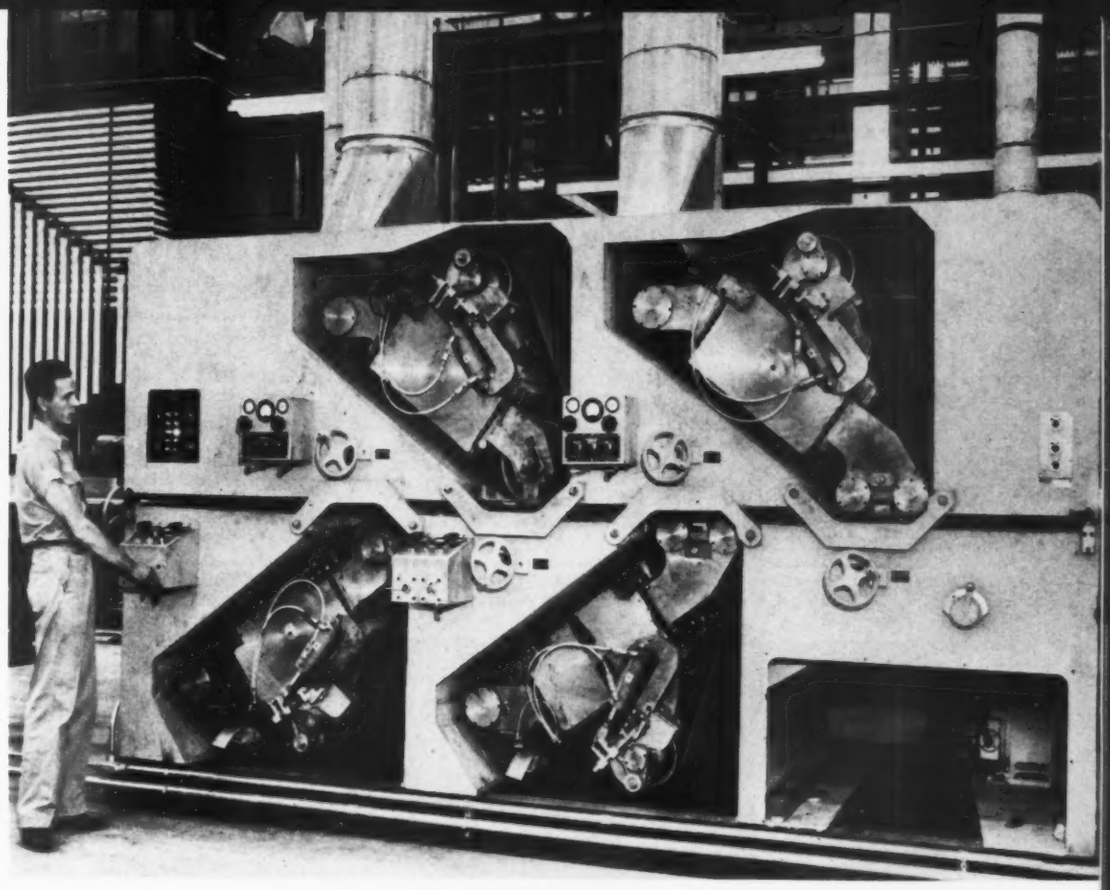
The fire damaged only Fastener Corp.'s Building No. Six, and left two adjoining buildings untouched. In addition, four other buildings on the Duo-Fast plant site were unharmed. Except for the fire in Building No. Six, only small amounts of water damage were experienced in the near-by structures. Completely untouched were the "priceless" Duo-Fast dies and fixtures.

Mr. John A. Torstenson, president of the firm, reported that key buildings housing the production machine shops, the tool and die departments, the engineering department, the box plants, and the new office building were not damaged, and continued operation without interruption.

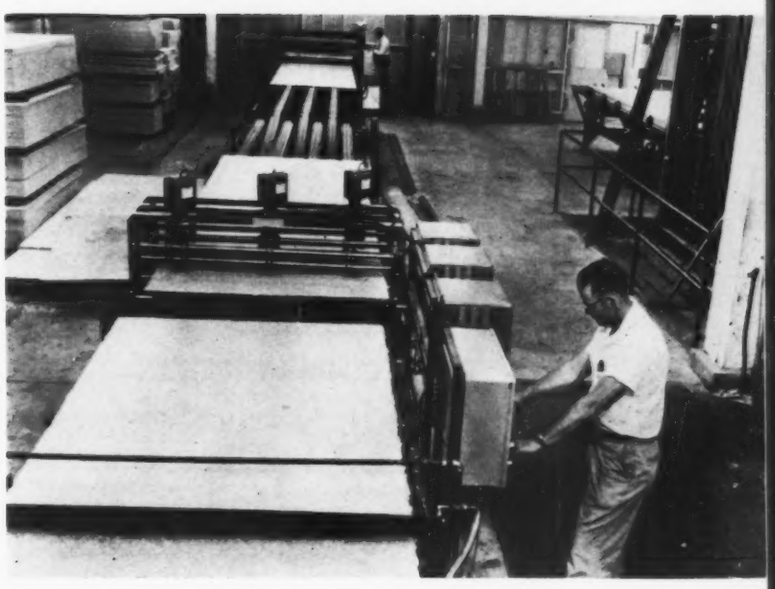
Production operations in the undamaged buildings, plus substantial Duo-Fast manufacturing facilities in other locations, were placed on an around-the-clock schedule. Existing inventories in the 50 Duo-Fast offices, added to this all-out effort, will properly service Duo-Fast customers during this emergency.

Torstenson reported that plans for a new plant had already been made, with hopes of occupancy in 90 days. Meanwhile, additional manufacturing facilities were leased for use until the new structure is completed. ■

PLANT WORKERS examine shelves of priceless Duo-Fast dies and fixtures which were undamaged during the fire last month.



FOUR-BELT sander, right, made by Smithway Machine Co., does a smooth job of finishing U.S. Plywood Novoply on both faces of the panels simultaneously at speeds up to 150 f.p.m. Directly below a motorized Paul Bunyan moves cord of pine logs to the production line of the automated particle board plant. Sensitive gauging of thickness is done by three electronic monitors, lower right, which check each Novoply panel on the way to the cooling "oven." Any minute variation is automatically signalled to the start of the automated production line for immediate adjustment.



New Plant Makes U.S. Plywood Largest Particle Board Producer

United States Plywood Corp. became the world's largest particle board producer with the recent opening of its $3,500,000 South Boston, Va. plant. The new highly-automated factory will produce the equivalent of 30,000,000 sq. ft. of ¾ in. board a year, which when added to the company's Anderson, Calif. plant makes U.S. Plywood's total production 80,000,000 sq. ft. of three-ply Novoply board annually.

"With our new plant in full production, we expect to increase annual sales volume at the distribution level by about $7,000,000," A. W. Antoville, U.S. Plywood chairman said.

About 50,000 cords of southern pine a year will be purchased locally to operate the plant at the outset, although U.S. Plywood has also acquired several thousand acres of timber land in the area which it will manage on a "tree farm" basis to meet half the plant's yearly needs.

At the plant opening Gene C. Brewer, the company's president, said particle board was the fastest growing forest product on the market. "Its growth rate is about 38 per cent a year for the past five years and has brought production in the industry to

TO PAGE 71

PRODUCT MIX AFFECTS PROFITS
FROM PAGE 61

and equitable, it should recover all expenses consistently to provide the expected profits as stated on the estimate sheet. Lack of consistency results on a profit gap as charted on Exhibit 1. Here's a simple test to determine whether your estimating procedure accomplishes this goal.

Test Cost Recovery:

Exhibit 2 shows how this test was made for a company using a variety of facilities and producing a wide range of products. Listed under each of the five parts is a condensation of the major expense elements which appeared on the acutal respective estimating sheet. No matter how the estimate sheet was set up, it was possible to deposit the expense figures into the three categories of Direct Labor. Total Overhead and Materials Cost. The method of allocating overhead to each product was to assign uniformly 150 per cent of the part's direct labor. This percentage was obtained from the 1959 P & L statement.

By this method of overhead allocation the company stated, in effect, that they were disregarding:

a. The fact that one piece of equipment cost more to operate than another.

b. That the five products made varying use of facilities.

c. That the circumstances which produced the 150 per cent occurred in 1959 and may not necessarily be the same for the current year.

The estimated total cost represented the addition of the three cost segments. Then the profit margin expected was added to get the actual selling price.

The product mix percentages indicate the dollar volume of each of the parts comprising the major product mix. This percentage, while not directly translatable into facility usages for the parts, does indicate comparative activity.

The weighted composite cost estimate is obtained by the addition of three weighted cost categories. To get each weighted cost, multiply the product mix percentage by its respective expense for each part, and then add for all five parts. As an example, here's how to get the compositized estimate for Direct Labor:

5% x $5.20	$.26
10% x $3.00	.30
15% x $ .86	.129
40% x $ .21	.084
30% x $ .06	.018
Weighted composite direct labor	$.791

The weighted composite estimate, if developed from the entire mix of products, should be the mirror of the profit and loss statement. In practice, an exact reconciliation cannot be expected because of fluctuations in material costs, the performances of labor, and omitted elements of product mix.

If the estimating assumes standard productivity attainment and the actual performances are below standard, then the company is kidding itself and a lower figure shows up in the compositized estimate. In this case the company must absorb the cost of subsidizing the sub-standard workers which shrinks profits.

While this test is effective for evaluating the real gains from a wage incentive system, its most important function is to show up where the largest gap is between actual and esti

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See Phone Book Yellow Pages, Spraying, for Graco Suppliers

FOR DATA CIRCLE FDM NO. 1942

mated costs. When overhead is allocated to products on the basis of direct labor, the area of disparity is typically and usually, the total overhead cost—as shown later in this test.

The weighted composite estimate is then assigned percentages of the compositized sales dallar so that later comparisons can be made.

The P & L statement for the same period, from which the individual estimates were drawn, is then condensed to the same expense categories as the estimates and assigned percentages of the sales dollar.

In the third section the percentages for the composite estimate are inserted under the "Estimated" column and those for the P & L under the "Actual" column and the two compared. The adjacent columns show the differences or gaps between estimated and actual costs. The gain refers to an over-recovery. The loss is an under-recovery for which customers should have been charged. In the case of materials, this difference ($.003 x $2,750,000 or $8250 annually) is usually the result of underestimating waste, or over estimating yield or high reject experience.

The real offender is in the under-recovery of total overhead costs. For each dollar of sales, $.135 was lost due to the undercharging of customers. See *Exhibit* 1. The case illustrated doesn't call for a mass markup of prices to recover lost overhead. The estimated overhead was 150 per cent of direct labor, whereas the actual for the year was 207 per cent.

If that 207 per cent was known in advance and applied, the estimated and actual costs would reconcile on paper, but not in practice. First of all, this practice would lead to overpricing and a decrease in sales. This would create a high loss of activity and an amount of unrecovered expenses due to that activity loss which might more than wipe out the gains of higher prices. For example. Part A in *Exhibit 2* involves some small single spindle work and lots of hand assembly. The cost of facilities is comparatively low. Yet it is penalized by having to carry more than its share of overhead because of the "magic" percentage in effect. This practice artificially inflated its selling price and as a result it had the lowest sales of all.

On the other hand, Part D involved the highest priced equipment in the shop and carried the same overhead percentage. The machine-hour rate showed that the proper overhead charged would have been the equivalent of 370 per cent for this part. Pricing by means of the "magic" number obviously resulted in brisk low-profit sales.

How Product Mix Affects Profits:

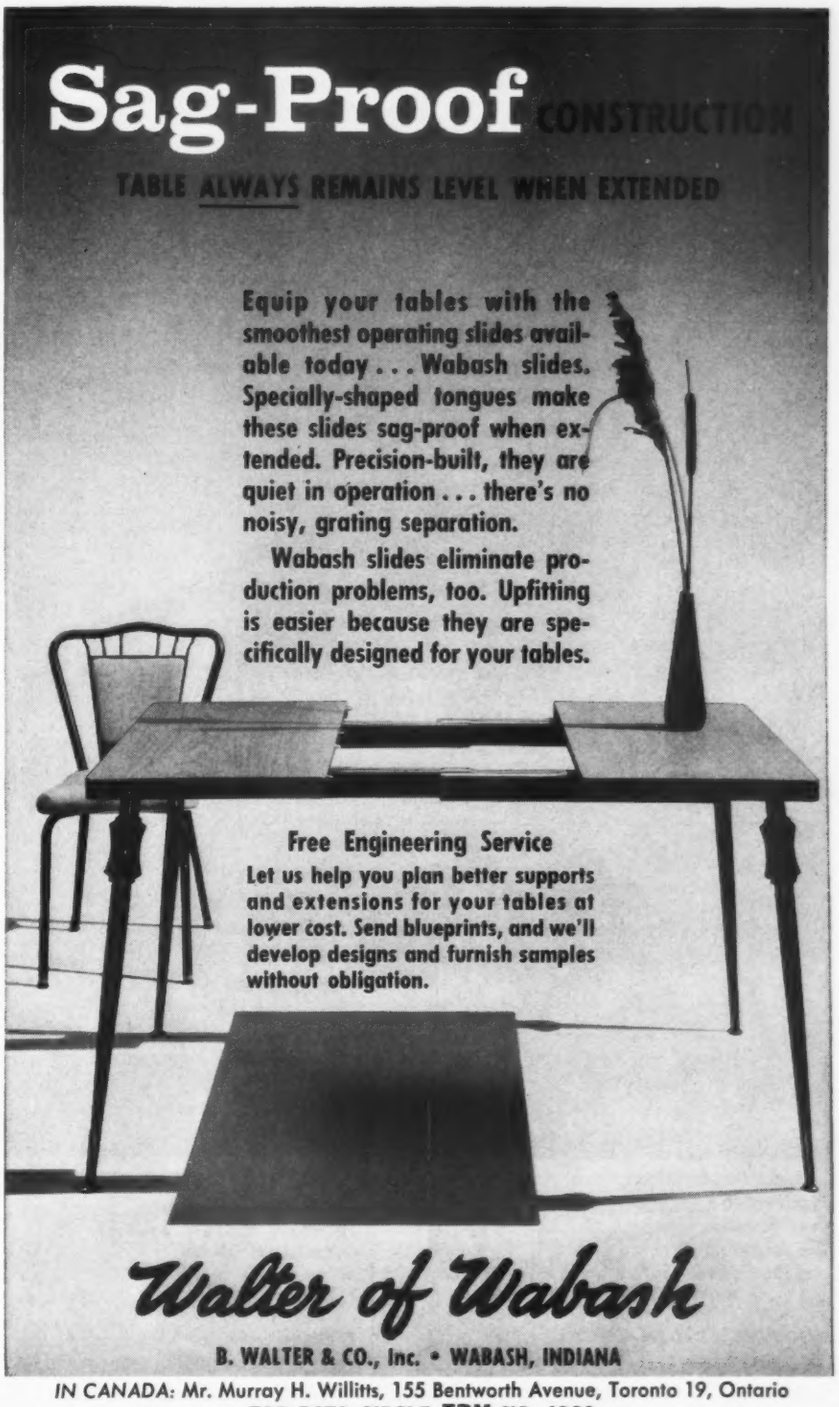
As the product mix changes, the company is victimized by the overhead - as - a - percentage - of - direct - labor method of assigning overhead costs. *Exhibit 3* shows how product mix affects profits. This company had a $1,000,000 annual sales volume in three types of products represented by Parts A, B, and C.

Section 1 shows the information taken from their actual estimating sheets. Sections 2, 3, and 4 show what happens to company profits under three different conditions of product mix, for the same $1,000,000 sales volume.

Exhibit 4 shows the parameters of the three products and the effect on overhead cost exerted by three different states of product mix.

The data in *Exhibit 3* is self-ex-

TO PAGE 70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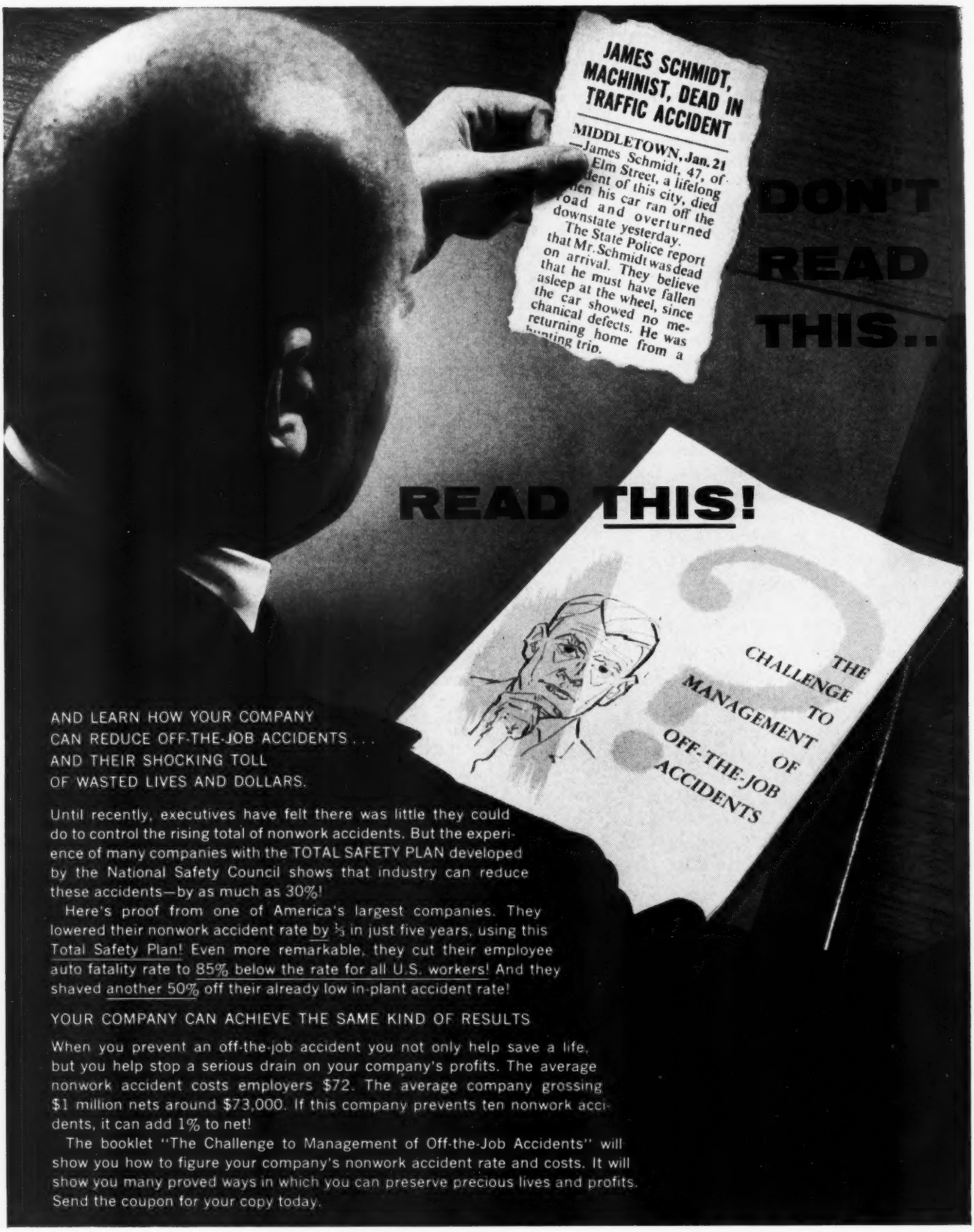
JAMES SCHMIDT, MACHINIST, DEAD IN TRAFFIC ACCIDENT
MIDDLETOWN, Jan. 21 —James Schmidt, 47, of Elm Street, a lifelong dent of this city, died hen his car ran off the oad and overturned downstate yesterday.
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FOUR SURFACES SANDED IN ONE PASS

CONTINUED FROM PAGE 62

"Conservatively," Shearin said, "we've cut our man-hours by 75 per cent in sanding bench rails. And that doesn't take into consideration the increased production achieved by using this machine."

Before the sanding and polishing sticker machine was placed in operation this year, eight men were used part-time in the four-step job of turning out rails. Two men operate the new machine. One man feeds the machine; the other stacks the finished rails. The other six men now maintain their regular job assignments.

Between 500 and 300 benches are manufactured a day, constructed with four rails finished by the new machine.

Shearin, whose firm is one of the nation's largest manufacturers of piano benches, said specialty items were becoming a bigger and bigger part of his business.

"We will make any accessory that can be sold by piano and organ dealers," he reported.

The firm makes both high and low price line furniture. Woods used include oak, walnut, maple, gum, birch, cherry, korina, avodire, limba and mahogany.

Clyne's sanding and polishing sticker machine, which has four belts for rail finishing, has two belts above the workpiece, a third below and the fourth to one side.

For solid stock, the machine is equipped with a 120 grit 3M brand RN Garnet cloth belt and a 150 grit Three-M-ite brand Resinite belt on top to sand and polish the flat side. On veneers, 150 and 180 grit Three-M-ite brand Resinite belts are substituted. On the edges and bottoms of the rails, 100 grit Three-M-ite brand Resinite belts are used.

All belts are X weight. Belts used on the sides and bottoms of the rails are 7 by 106 in. The edges are sanded with a 2½ by 106 in. belt.

The machine is approximately 17 ft. long, 5 ft. wide and 6½ ft. high. Major set-up changes take about 15 minutes, while minor ones can be made in five minutes.

Equipped with a removable fixture, the machine also produces square tapered legs for piano and organ benches faster than ever before, and with a fixed taper. Each fixture holds two legs. The legs are sanded and polished in four passes through the machine.

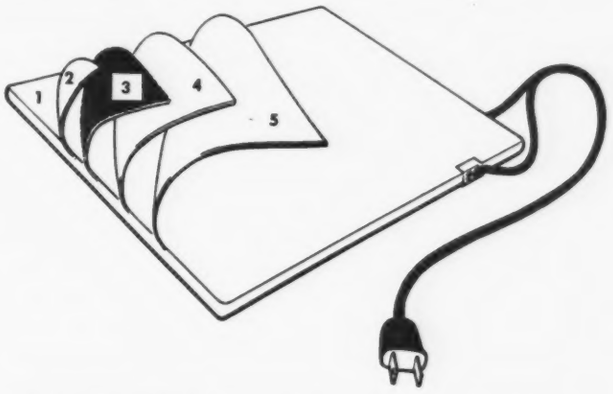
In the past, it required skill to produce the proper taper. The human element, Shearin said, sometimes caused a variation between legs. That is impossible with sanding and polishing sticker machine. A cam device tilts the faces of the legs at the proper instant to produce a standard taper every time.

The word "sticker" in the name of the machine was lifted from a shop term for a molder, Clyne said. "The machine does in sanding what a molder does in machining," he explained. ■

For More Information Circle Reader Service Number 860

NEW LAMINATE MADE OF LIGHT

CONTINUED FROM PAGE 26



TYPICAL EXAMPLE of electroluminescent lighting material construction is seen in this exploded drawing of Sylvania Panelescent light source. The layers are: 1. Basic metal back plate. 2. Glass-based current-conducting material. 3. Layer of ceramic material containing electroluminescent phosphors. 4. Transparent current-conducting material. 5. Sealing and insulating layer of transparent glass that hermetically protects lamps from humidity and mechanical damage.

The life of luminescent lamps is from 5,000 to 30,000 hours compared to an average of 750 hours for the familiar incandescent light bulb. A high degree of safety is inherent in the design of the lamps.

According to Sylvania engineers the luminescent lamps are extremely inexpensive to operate, drawing on .06 milliamperes per sq. in. on 120-volt circuits. That would mean the total electrical cost to operate each one sq. in. of a lamp's surface would be less than one penny for an entire year.

The principle producing the light is similar to that in fluorescent lamps and tv tubes, where electricity excites the phosphor material to glow.—*Alfred DeBat*

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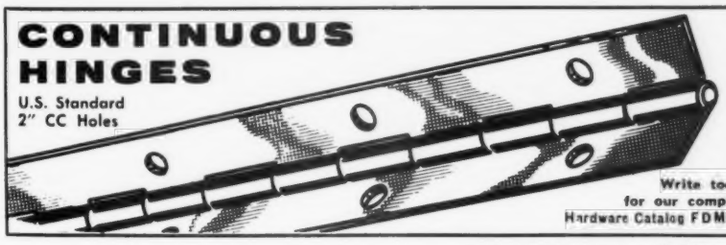

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FOR DATA CIRCLE FDM NO. 1947

NEW MODERN STYLING

FROM PAGE 23

collection in walnut.

The studio bed in the 82-piece new Bonwitz Collection, introduced during this year's spring Southern Market at High Point, is another illustration of Wallack ingenuity to meet American living demands. In the "small-space category," the piece slides to seating width beneath a bookcase back. Or it can go into a bedroom, as a king-sized headboard.

He uses white for frequent accent, with baked-on enamel board often simulating white plastic bottoms.

The advent of fringe pieces, to be commercially obtainable by the majority of buyers, is considered important by Wallack. Such pieces as wall units, corner beds, stacking bookcases and stacking desk, have moved from their original purpose of display, into the realm of volume production and volume sales.

Workable, marketable woods favored by Wallach are walnut, mahogany, butternut, pecan, and primavera. He believes that rare woods will be used more, depending on acceptance by the public.

"If the demand is apparent, the supply will keep up," he predicted, giving teak as an example. "Much teak wood is available, and much more would be cut, reducing the rare and costly factor, if people used it more."

Other materials and decorative ideas with which Wallack likes to work are leather, marble, metal grilles, cork, cane, fabrics on mirror borders interchangeable with bedroom accessory fabrics, ceramics, enamel, and decorative glass.

"Skillful use of decorative materials to give distinctive design is one difference between today's modern and yesterdays' modern," he said.

He pointed out the many interesting materials from abroad—Italian and Dutch tiles, German extruded aluminum for mirror frames, Spanish wrought iron and brasswork.

"If the prices are right, delivery problems can be overcome."

In colors, he finds that beiges and browns have mass appeal as fabrics. His wood accent pieces run towards greyed blues, orange and white.

In finishes, he believes that browns and tans are the most popular wood tones, and that the trend is towards lighter-than-walnut but not blonde.

On the role of the designer in industry, Wallack said: "Today there are more designers than ever before, and they are increasing each year. They need still more freedom. The factory can't 'advise' the designer as much now as it once did."

"Wallack, who lives in Chevy Chase, Md., is married to the former Alice Bergen of Oxford, N. C. They have two children—Eliot, 15, and Lynn, 11.—*Carolyn Knuemann*

PRODUCT MIX AFFECTS PROFITS

FROM PAGE 67

planatory with the exception of the actual total overhead cost figures. These were developed from a machine-hour rate structure which, of course, allocates overhead in accordance with the usage of facilities.

Note the losses for Parts A and B under the Condition A product mix, which then turn into profits under a different product mix represented in Condition B. And in Condition C, Parts B and C are the losers. These circumstances occur at the same total sales volume, the labor and material cost of each part held at the same level and the selling prices for each remaining the same. The only change is the individual level of sales of each, i.e., the product mix. This product mix reflected back into the specific operations manifested changes in equipment usages and in the amount of overhead used by each part.

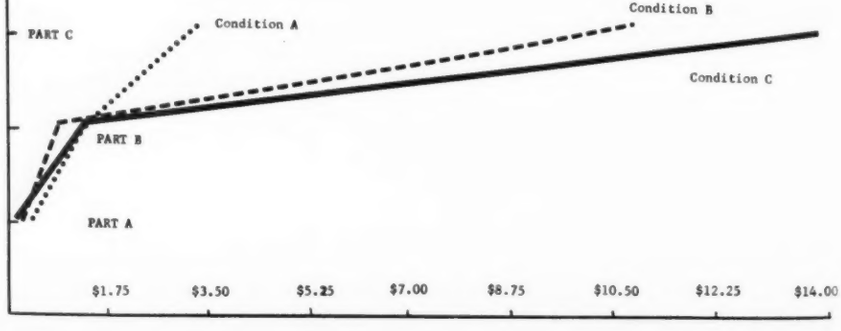
Selling prices in Section 1, *Exhibit 3 (estimates)* were developed from allocating overhead on the direct labor base. Using this method, the more volatile the product mix, the more the company will suffer from insecure pricing and capricious profits. At one extreme, the company will lose from over-priced and therefore slow-moving items, and, at the other, deluged with break-even or loss business. Th three conditions, certainly typical i machine-shop operations, cause profit range of from 4.3 to 14.7 pe cent on the same $1,000,000 volume.

The reactions of some manufacturers to correct costing deserves mention at this point. Some ask, "Can I raise my prices just because I have a new cost system?" This shows that our message does not always come through loud and clear. Actually, some prices will be lowered, with the volume increasing enough to overcome the drop in the original price and going on to provide higher profits. Some prices will be increased; perhaps so slightly as not to be felt. Maybe, for realistic reasons, a price that should be increased won't be to an existing customer, but will be to a new customer.

See Part C in Condition A. Raising the price from $7.67 to $7.77, just 10 cents adds $7,822.60 to annual profits. Or raising the selling price on Part A to .225 a matter of one-half cent increases profits by $6,818.18. The goal is knowing what to raise or lower, when and by how much. The magnitude is not the criterion—not as long as we have competition.

Others ask, "What's the good of knowing my costs; competition sets the price." This is like telling a man in the air-conditioning business that there is no use in measuring temperatures, because the measurement in itself will not change the weather. Picture the dilemma of a producer who does not know his cost-floor. In important situations where marginal profits are acceptable, how will he know when he is selling safely above his cost? If he is prepared to make concessions, how much is unnecessarily given away? Or by how much is an order lost?—*Spencer A. Tucker*

EXHIBIT 4: Variations in Total Overhead Cost with Product Mix



COST REDUCTION & CONTROL
FROM PAGE 59

a large custom shop in which product items are made in very small lots, or made once and never repeated. But in a production type shop with 100 or more employees it would almost certainly pay to have one or more people full time on cost reduction without any other duties.

If such a program were started, it goes without saying that management should check up periodically on the results obtained. But management does this anyway in connection with other functions such as purchasing, production, quality, etc., so why not a similar check up on cost reduction activities.

It is always possible that the first man put on the job may turn out not to be the right man, but this risk attaches to any job in the plant.

It would be ideal if the man put on cost reduction could have had training and experience in industrial engineering. But if such a man is not available, keep in mind that keen observation, common sense, and the attitude "There must be a better way" can accomplish a lot.

Whom should the cost reduction man work under? It depends on your organization. If you have an industrial engineering or manufacturing engineering department that would be a logical spot. If not, working directly under the shop superintendent might be a good answer. The exact spot in the organization is not as important as the fact that somebody is paid to work exclusively, full time on cost reduction, and that results are checked periodically, maybe once every six months. Even if you are skeptical, six months pay for one man is a small gamble; and you'll probably win.—*Rudolph Willard*

U. S. PLYWOOD
FROM PAGE 65

more than 300,000,000 sq. ft. annually," he reported.

The U.S. Plywood product Novoply is manufactured at the new plant through the process licensed by the Fahrni Institute in Switzerland. Production begins with the delivery of "round" pine logs at weighing-in scales on the property. Here logs are bought by the pound, as are many other farm crops. They must be in five-ft. lengths and within diameter limits of four to 14 in.

The logs then enter what is known as a ring type debarker. Metal teeth projecting from a revolving ring strip off the bark as logs pass through. Circular saws next cut the logs into 15-in. blocks.

These blocks move into the flaking room where an automated merry-go-round conveyor, activated by photo-electric eyes, kicks blocks into huge machines that make face and core flakes of carefully engineered shapes and thicknesses that contribute unique characteristics to the patented three-ply particle board of sandwich-like construction called Novoply. The best blocks are presorted for making the face flakes.

Drying of the face and core material in huge, horizontal, rotating drums is done with extreme care, and then the two types of flakes are screened to separate out the too coarse or too fine material that may develop in the flaking process.

After screening, the raw material for Novoply travels by air in pneumatic tubes to storage silos.

From the storage silos—again traveling on air—carefully measured quantities of face and core material, are blended together with adhesives so that every portion of every flake is coated with adhesive as it enters the forming line.

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Every panel, after leaving the press, is measured for thickness and weight to be sure it meets rigidly predetermined specifications.

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TO PAGE 72

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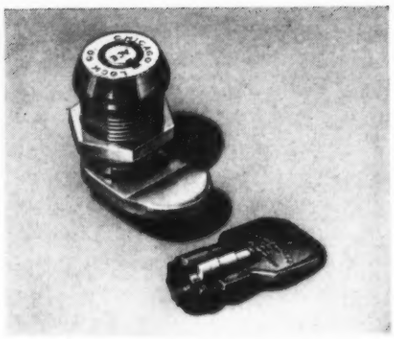

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U. S. PLYWOOD
FROM PAGE 71

This assures the setting up of the adhesives under conditions to allow no warpage to occur. Once the panel is cool, it is the most warp-free forest product known.

Final phase of Novoply processing is the remanufacturing department where revolutionary new sanding and sawing machines turn out the ultra-smooth and precision-sawn panel that is the hallmark of Novoply.

Further processing, according to customer needs, may include machining, applications of special coatings, or edge-banding with strips of wood. ■

DESIGNING WITH WOOD
FROM PAGE 24

signers began to make subtle use of it. Often the butt log of a walnut tree had stronger figure and some cross fire of at least 20 in. in length to make an accent door front to give a decorative flair to a unit. Quartered veneer amounted to only 2.5 per cent and figured quarters were less than 1/3 per cent.

The heavy pigmentation days of the modern furniture were about over however, and with the acceleration of Scandinavian styles, of French provincial and the Spanish-Italian "Mediterranean" influence, walnut accelerated to its present leading position in point of millions of feet of veneer cut and sold. Befitting the trend to geometric pattern and matching techniques, 95 per cent or more is now flat cut or half round. The dominant figure of walnut is much preferred, especially in an era where clarity of finish is paramount. The semi-open pore fiber of walnut accepts coloration to achieve the particular nuance of warm or cool brown the designer and manufacturer feel will capture public favor.

Constant variety through accent or figured areas or geometric lay-up of veneers is a prime consideration in any new grouping. The volume of figured woods is not yet reflected in the tabulations, but it is increasing, being over 4,500,000 feet in 1960. It must be stated however, there are equally important accomplishments in finishing with toners, with bleach and distressing treatments that give a new dimension of character to walnut. Finishing companies and the furniture firms they sell report walnut can be finished easier and in more ways than any other wood.—*R. D. Behm.*

SIMMONS PLANT
FROM PAGE 42

Co.'s Raval molded backs and seats are attached to certain chair models. Fiberesin laminate panels are affixed to motel table tops, and Bassick casters are put on movable furniture.

One of the leaders in the hospital bed field, Simmons produces several unique units. It is the only manufacturer, the company reports, of an automated hospital bed that can be safely operated in an oxygen tent where the atmosphere is highly explosive. The model has a completely sealed motor unit and specially designed controls which prevent the possibility of electric sparks.

More than 15 years of research in the production of automated hospital beds, Simmons now produces models which raise and lower the mattress height, and adjusts sections of the bed to sit–up and other hospital treatment positions.

In these beds Simmons uses one or two motors, supplied by Franklin Motor Co., Bluffton, Ind., with various transmission gears for the different functions of each automated bed. Protected from overheating, the motors have automatic cutouts, which keep mechanisms from damage—a safety factor illustrating Simmons quest for quality in all areas of production.

When engineers designed the motorized hospital beds, they set standards even higher than on the company's manually operated beds. Testing proved this out, since Simmons found that while a nurse-powered manual bed was adjusted only two or three times a day on the average, the automated hospital bed was operated as many as 28 times a day by the patient.

The beds are rated to lift more than 400 lbs., heavier than any possible patient. But, again, this extra safety factor didn't prove to be excessive when a doctor found eight children in one hospital ward riding up and down on an automated bed.

Perhaps the Simmons hospital bed is a good example of the company's aim to provide not only style, but continuing reliability in all its contract and consumer products. The same careful workmanship is seen in every piece of furniture, and the same research and development serves as the background of Simmons entire line.—*Alfred DeBat*

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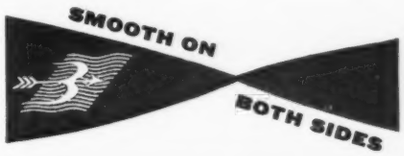

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FDM
FUTURE DATES FOR MANAGERS

FURNITURE MARKETS

July 9-14	**Los Angeles Furniture Market** Los Angeles Home Furnishings Mart
July 9-14	**Portland Furniture Market** Memorial Coliseum
July 9-13	**Seattle Furniture Market** Northwest Furniture Mart Bldg. National Guard Armory
July 10-14	**Dallas Homefurnishings Market** Dallas Homefurnishings Mart Dallas Trade Mart & Market Hall
July 10-14	**High Point Furniture Market** Southern Furniture Exposition Bldg.
July 17-21	**San Francisco Furniture Market** Western Merchandise Mart
July 17-21	**Atlanta Furniture Market** Atlanta Merchandise Mart
August 17-20	**Annual Florida Furniture Mart** Americana Hotel Miami Beach
August 28-31	**Boston Furniture Market** Commonwealth Armory
October 16-21	**Grand Rapids Furniture Market** Exhibitor Building Waters Building
October 16-21	**Chicago Furniture Market (Including Summer and Casual Furniture)** American Furniture Mart Merchandise Mart
October 20-27	**Southern Furniture Market** Southern Furniture Exposition Bldg. High Point, North Carolina and area covered by Furniture Factories Marketing Assn. of the South

SPECIAL EVENTS

August 18-19	**Production & Cost Div. Meeting Southern Furniture Mfrs. Assn.** Mayview Manor Hotel Blowing Rock, N.C.
August 29-30	**Sales & Marketing Div. Meeting Southern Furniture Mfrs. Assn.** Greenbrier Hotel White Sulphur Springs, W. Va.
September 16-19	**National Assn. of Furniture Manufacturers 33rd Annual Convention & 7th Annual Supply, Equipment & Fabric Fair** Conrad Hilton Hotel Chicago, Illinois
September 26-27	**National Hardwood Lumber Assn. Annual Convention** Statler Hilton Hotel New York, New York
September 28-29	**Woodworking Machinery Manufacturers' Assn. and Woodworking Machinery Distributors Assn. Fall Meeting** Sheraton-Towers Hotel Chicago, Illinois

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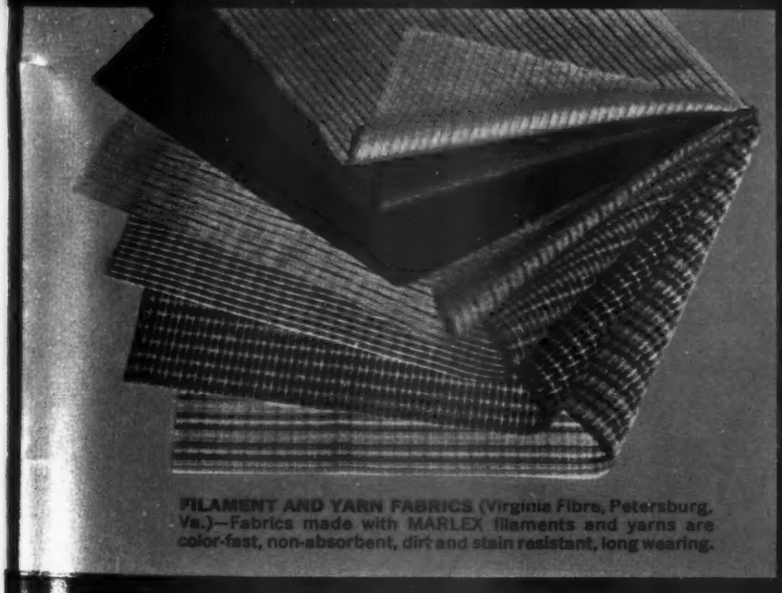

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